THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

American Chemical Society, Petroleum Division, Columbus, O., Apr. 29 to May 3.

Kansas Oil Men's Association, Broadview Hotel, Wichita, Kan., May 2, 3.

American Gas Association, Natural Gas Dept. Kansas City, Mo., week of May 6.

Wisconsin Petroleum Association, Beaumont Hotel, Green Bay, May 15.

Virginia Independent Oil Men's Association, Richmond Hotel, Richmond, Va., May 15, 16.

National Oil Scouts Association of America, Fort Worth, Tex., May 20, 21.

Natural Gasoline Association of America, Mayo Hotel, Tulsa, May 21, 22, 23.

West Virginia Oil Marketers Association, Daniel Boone Hotel, Charleston, W. Va., June 13, 14.

Independent Oil Men of America, Stevens Hotel, Chicago, Oct. 21, 22, 23.

NATIONAL PETROLEUM NEWS

Vol. 21 No. 18

Published by
The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.
Tel. Cherry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.

New York, 342 Madison Ave., Tel. Vanderbilt 3951.

Houston, 612 West Bldg., Tel. Fairfax 6286. Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1929, Trade Mark Registered U. S. Patent office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

A. P. I. directors to push compact for limiting production among oil states as suggested by Federal Oil Conservation board 27
Oklahoma Corporation Commission considers extension of proration 30
Majority of California companies falling into line on first proration order 31
Kettleman Hills operators seek curtailment plan 32
Gasoline must be considered a major product and marketed close to home, National Petroleum Association told at Cambridge Springs meeting 33
Review of late production news 40
E. G. Seubert, president of the Standard of Indiana, elected A. P. I. director 40-f
A. P. I. committee recommends publishing weekly refinery statistics 40-f
Average compression ratio of American automobiles raised to 5.07 to 1 ... 40-g
Activity starts around two recent Pottawatomie county discoveries 47
Mid-Continent oil scouts discuss merging with National Oil Scouts Association at Wichita convention 53
Drilling reports from leading fields 54-56
L. A. Snyder resigns as sales manager of Champlin Refining Co. 107
Tidal Refining Co. buys refinery site on Houston ship channel 110
U. S. crude production and imports, week ended April 27 127
N. P. N. western refinery figures, week ended April 26 128

Engineering

Should the present tendency toward heavier motor oils continue?—*by Charles McLean*, National Petroleum Association paper 37
Roasting of spent clay most important item in filter house operation —*by Karl W. Nichols*, National Petroleum Association paper 38
West Texas, what threats and promises it holds for the refiner and the industry, Article 1 ..... 40-c
Regulation of "beans" on California wells increases production 59
Automatic water supply system designed for gas lift and gasoline plant 64
Roller bearing stops rod kinking 66
Control gasoline and fuel oil quality in cokeless cracking process 69
Modern liquid phase cracking plant has become a whole refinery—*by George C. Hargrove* 76

Merchandising

Oil companies may aid tire dealers in building super stations 40-a
Two small trailer trucks deliver 6986 gallons in day 40-b
Big storage tank at service station a fort in case of price war 84
S. O. New York ties up this season's tourist advertising campaign with governors in seven states 86
More pictures of truck tractor hill climbing tests 88-89
Facts on 1929 gasoline tank car market the jobber must know 91

Markets

Mid-Continent, prices steady, one export order placed, domestic buying fair, page 109.
Chicago, buyers seeking May gasoline, sellers unwilling to quote for next month, page 111.
California, export gasoline price unsettled, page 116.
Pennsylvania, cylinder stock prices soar, page 117.
New York domestic, California and local gasoline prices higher, demand heavy, page 118.
Gulf export, three cargoes out of five inquiries are sold, page 118.

Refinery price tables 112, 114, 115
Complete seaboard prices 122
Tank wagon price tables 124, 125
Crude oil prices, all fields 127, 129

Departments

The Editors' Viewpoint 43
The Mid-Continent skyline 45
Our industry 49
Visiting around the refineries 75
New patents 80
Along the air lanes 82
On the Lazy Bench 103
Oil trademarks for copyright 130
Oil company finance 132, 134

W. L. Stewart

NO OTHER officer or employe of the Union Oil Co. of California holds a service record equal to that of President W. L. Stewart. His actual connection with the company began 40 years ago, in 1889, the year before the Torrey Canyon, Sespe and Hardison & Stewart Oil Companies were consolidated into the Union Oil Co. of California.

Born in Pennsylvania in 1868, Mr. Stewart accompanied his father, the late Lyman Stewart, to California at the age of 15. After attending the University of California at Berkeley, the younger Stewart engaged for a time in orange growing and stock raising before taking a job digging a cellar under the old Santa Paula offices of the Hardison & Stewart Oil Co.

He became a member of the Union's board of directors Oct. 8, 1892, was elected treasurer two years later and became company secretary Oct. 14, 1895. He was successively elected second vice president and first vice president, carrying also from 1903-1915 the title of executive department manager.

NATIONAL PETROLEUM NEWS

Vol. 21 CLEVELAND, MAY 1 No. 18

Institute Directors Take Conservation Program Back to Oil States

By Lawrence E. Smith
N. P. N. STAFF WRITER

NEW YORK CITY, April 27

IMMEDIATE attention of the American Petroleum Institute committee directing its crude conservation program is to be given to the compact of oil states suggested by the Federal Oil Conservation Board.

In the meantime other phases of the Institute's controlled production program are held in abeyance, but the institute committee set-up continues unchanged.

The proration movement now being carried on in Texas, Oklahoma and California continues effective since those are purely local programs.

It has been generally assumed that an agreement of oil states limiting drilling or otherwise regulating production of crude oil, as suggested by the oil board to the institute committee, would take perhaps two or three years to work out.

Institute directors, in New York April 24, set in motion a plan to see if a compact of oil states, if feasible, cannot be brought about on a few months.

All that was said officially after an all afternoon meeting of Institute directors was that the Institute committee desired to co-operate in the plan suggested by the government. It is known, however, that present plans are for the institute committee to take an active part in developing the idea of a limiting agreement of oil states on crude production.

Sentiment in Texas, Oklahoma and California is to be sounded out to see what the attitude is of the industry there and the politicians on such a limiting agreement.

If action of the state legislatures is needed to give their governors the authority to take part in such an agreement it is to be seen if such legislation cannot be secured within the next three months before the present legislatures adjourn.

The plan has also been proposed to call the governors of these three oil states and perhaps others together at Colorado Springs within a few months with leaders of the oil industry and representatives of the government to discuss an oil compact.

Another move on the part of institute directors to push the idea of a state compact to rapid conclusion if that is the feasible regulation program to work out, was the appointment of a small committee to see Secretary of the Interior Wilbur, at Washington, within a few days. W. M. Davis, Phillips Petroleum Co., Bartlesville, is chairman of this committee. Other members are Axtell J. Byles Tidewater Associated Oil Co., and R. C. Holmes. The committee will find out from Secretary Wilbur what more definite ideas regarding a compact of states the secretary has than were expressed in his letter to Chairman Holmes, of the institute general committee.

A STUDY of the refinery gasoline markets today, bringing out the facts the jobbers of the country must be familiar with in order to do their gasoline buying for 1929 on a sound basis, is to be found starting on page 91 of this issue.

It is understood that Mr. Davis is to convey assurances of A. P. I. support to Chairman Wilbur and to discover, if possible, the procedure Mr. Wilbur had in mind when he wrote Mr. Holmes three weeks ago suggesting an "interstate compact" to promote conservation.

It is doubtful that Secretary Wilbur will have much to say until Dr. George Otis Smith, director of the U. S. Geological Survey, returns from his tour of the principal oil producing states, whence he was sent by the oil board to discuss the proposal with state governors.

PRESIDENT E. B. Reeser of the institute, left for California immediately after the directors meeting April 24, to sound out sentiment of the industry in California.

Dr. George Otis Smith, director of the U. S. Geological Survey, and emissary of the oil board in sounding out the governors of oil states on the compact is expected back in Washington in three weeks. While plans for further cooperation on the part of the institute are to be held in abeyance until Dr. Smith reports the institute committee does expect to sound out, in the meantime sentiment of both the industry and the politicians on the general proposition of a compact of oil states.

Nothing of the plan was officially announced, but reports current immediately after the directors' meeting April 24 had it that the A. P. I. will seek to help prepare the way for the proposed compact, or treaty between states, by causing the proposal to be placed in the near future, before legislatures of Texas, California and Oklahoma. The lawmakers of two of

the states are now in session and the governor of Oklahoma has called that legislature to meet soon in extraordinary session.

It is hoped by A. P. I. directors who believe the federal board's proposal to possess merit that authorization may be given by these legislatures to their governors so that when they finally come to meet with the federal board they may speak definitely. A meeting of governors of oil states was talked of for Colorado. Springs some time this summer.

E. B. Reeser, president of the A. P. I., left New York soon after the meeting, for California. It was reported that a principal object of his journey was discussion with state authorities as to procedure in getting the federal board's plan before the legislature. Similar action in the other two states was reported to be decided upon.

THE foregoing is written entirely upon the responsibility of this journal. The A.P.I. directors were almost 100 per cent more reticent than usual, after this meeting. On recent occasions, as at the Houston meeting and the New York meeting preceding this one, carefully prepared written statements were issued to the press which waited in fidgety fashion in outside rooms. On this occasion the only word which came out officially was a list of those present and a short statement saying that the directors had agreed, unanimously, to cooperate with the federal board. The manner of such cooperation was left to the imagination of the press and that part of the industry not represented in the meeting.

The general committee of the A. P. I. committee on world production and consumption, set up as the result of action taken in St. Louis in February, met on Monday, April 22. It continued its deliberations in the office of R. C. Holmes, general chairman, Tuesday. On Wednesday the executive committee of the A. P. I. met in the forenoon and in the afternoon the directors were in session for upward of four hours.

It is said that the sole question under discussion was whether to go ahead on the plan adopted at previous meetings—that of holding production to the level of the daily average of 1928—or to take action which officially would discard the A. P. I. program and refer the conservation problem to the operators within state boundary lines.

Such abandonment of the A. P. I. program, which embraced not only the United States, but Mexico and the northern nations of South America, would, of course, be based upon the unfavorable opinion of Attorney General Mitchell, who wrote to the federal oil board saying it had no authority to approve the A. P. I. plan and intimating, without actually saying so, that the program was counter to the federal anti-trust laws.

Immediately prior to the New York meetings of the past week, there was outstanding sentiment among A. P. I. directors and members of the conservation committees that the only logical action that now could be taken was public expression that the industry had bowed to official opinion. On high authority it was stated that the A. P. I. would withdraw, as a body, from the conservation movement and the work would have to continue in the states, without national or international coherence.

That action was considered as certain to be taken. In the committee meetings, however, preceding the sessions of the directors, there was strong opposition to such course, led by Chairman Holmes and Wallace C. Franklin, Tidal Oil Co., Tulsa. It is understood that they stood firm in their view that the A. P. I. should not take summary action in abandoning a program that had been built up so carefully and which had been received with such great applause by the industry. Mr. Holmes had publicly asserted, immediately after the attorney general's letter to the federal board was published, that he believed the program should be carried out. In part, he said:

"My recommendation to the general committee of the American Petroleum Institute, of which I am chairman, and to the regional committees is that we carry on without delay as we have planned to do, in whatever ways and in every way that is open to us to do properly, and if by chance we are held to be acting in restraint of trade, leave it to the courts to determine whether such restraint is in the public interest."

FROM this position, Mr. Holmes had not swerved. Finally, after two days' discussion, the proposed nullification of the program by the directors was abandoned. Neither was the Holmes' position endorsed. Hence, the program is not dead but is dormant. The committees have not been discharged, but they are without instructors as to the future. The plan has not been killed, but it is not in effect, except as local groups, working within states, adhere to its general principles.

In short, the only program now is one of cooperating with the federal board and of following its lead to see whether the faint trail it has indicated leads to any constructive point.

Directors of the A. P. I., in their meeting, it is understood, spent much of the time debating on the advisability of making public a letter Mr. Holmes had written to the federal board. It was decided to be silent.

As to the proposed "interstate compact" suggested by Mr. Wilbur: There is little understanding yet of what is proposed. It is a principle new to the oil industry and its terms have not yet been illuminated by the one who proposed it. There is parallel for such action in the compacts that have been drawn between states from time to time on such questions as utilization of water for irrigation and for power development. The latest one, of course, is the Boulder Dam project.

THE force and effectiveness of such treaty arrangements depends upon ratification by the legislatures of the states and by the national Congress. At first glance it would appear that a long time would be involved in the creation of such a compact and that meanwhile the industry proceeds with no program except those in effect in Oklahoma, Texas and California. It is to strive to reduce the time that A. P. I. leaders are to confer with the federal board and with state executives.

Again, there is uncertainty as to what the terms of such a compact would be. Whether the states would enter into an agreement to limit production to a fixed total, each agreeing to insure performance of the contract provided the others carried out their end, how the figure of limitation would be arrived at and how enforced, are questions away off in the uncharted lands of legal speculation.

What measure of freedom would be preserved to the industry? How closely does this project tie into the compulsory unit operation of pools, hinted at by Secretary Wilbur in his recent letter? These are points upon which no information is to be had, even if the oil board knows where it stands.

The only certain thing is that the whole conservation program has become confused. There is a little irritation among the A. P. I. directors and committeemen over the manner in which the program was presented to Washington, but, on the whole, the ranks are unbroken.

Some gossip went around that Sir Henri Deterding was on the point of withdrawing the Shell interests from the movement. A cablegram of some length was received from him and circulated among the directors. He suggested that the movement be put upon another basis, in view of the Washington attitude, but indicated his hearty approval of any feasible plan that could be drawn.

Following is the only statement made by the directors, following their meeting on April 24:

"The Board of Directors of the American Petroleum Institute at its meeting today gave careful consideration to the proposals of the Federal Oil Conservation Board as contained in its letter of April 8 to

Keep Our Industry Fully Informed

AMERICAN Petroleum Institute directors are not helping the cause of the institute's crude oil conservation program by keeping all discussion concerning that program behind the closed doors of the directors' room at institute headquarters.

The institute directors, with a small seleeted list of others in the industry specially invited, have held two sessions, each lasting the best part of the afternoon in which they have considered new phases in the work of the general committee whose program for controlled crude oil production was launched in Houston March 15.

All that has been officially announced of the discussion at those two directors' meetings was in short statements so general as to be of no value to a man in the industry. They served the purposes of the daily newspapers in a superficial manner.

While it has always been the policy of the institute to hold closed meetings of its directors—and a policy that has cost the institute activities the full support of the industry on more than one occasion—it seems particularly unfortunate that this policy should hold on the conservation issue.

This is an issue in which the whole oil industry is vitally concerned to a greater extent than any other institute activity. The directors of the institute, and their invited guests, may represent in their various companies 75 to 80 or 90 per cent of the industry's production and refining capacity. This fact, however, does not carry with it the authority for them to plan and approve so important a program for the entire industry.

There are thousands of individual operators, among producers, refiners and marketers, who have just as great concern in this conservation program as the institute directors and their guests. What kind of a conservation, or crude stabilization, or controlled production program is worked out, under federal or state supervision, or under the industry's own initiative alone, means as much to each of these individuals, in the future conduct of their business, as it does to any institute director. Whatever progam is adopted has got to have their general support—the support of the industry—to be effective.

Not all the industry can attend those directors' meetings at which conservation is discussed and developed, even if those meetings were open. It would give the average man in the industry more confidence in the work if he knew he had the right to walk into the next directors' meeting and take part in its deliberations, if he so desired.

On top of that these thousands of men who are an active part of the industry, but not so fortunate as to be institute directors or invited guests, should have the knowledge that they could get a full and complete and unbiased report of what went on at those directors' meetings on this subject from the oil publications, perhaps from a published full report of the institute itself in addition. As it is now, representatives of the oil publications are supposed to wait, hat in hand, in the outer hall at institute headquarters, for the little slip of paper that gives what the directors want the industry to know of what has gone on behind the closed doors.

Perhaps the institute committee and the institute directors by regions should hold open meetings where the industry at large would be invited to attend and ask questions concerning the program. Perhaps the institute should invite correspondence from the industry on the program and make it public—anything to let the industry itself know it has a part in this really tremendous undertaking.

Several directors of the institute have said, after these two meetings in New York, that the biggest thing they got out of the whole discussion was their own education on the present economic trend of the industry. They said they could solve their own individual business problems better in the light of the presentation of general facts concerning the industry at these meetings.

Why confine this material to institute directors and a favored few?

Chairman Holmes of the general committee has had prepared a great amount of facts and figures relevant to the status of the industry today. This should have been published as widely as possible for the benefit of the whole industry. One great function of this whole institute program lies in the education of the industry to the point individual initiative, through better knowledge, will bring about conservation as a result of better business practice.

Mr. Holmes' committee could do a real function by carrying forward its statistical studies in the light of current facts, in the light of current changes in marketing territories, refining practice and so on, and making that information available to the industry at large as quickly as possible.

The rate of progress may be slower with the whole industry taken into the program, but it certainly will be more sure of its ground as it progresses.—V. B. G.

R. C. Holmes, chairman of the General Committee on World Production and Consumption. In this letter the Board stated as follows:

"'The problem appears to the Board, ... due to the legal inhibitions, to be one of the real solution of which action must be secured from the different states. The Board recognizes that individual state action without coordination would not cover the question, but with view to bringing about such a program and its coordination, the Board believes it would be worth while to renew discussion with the state authorities of the three or four principal oil producing states, particularly to learn if it is not possible for them to enter upon an Interstate Compact under the provisions of the Constitution authorizing such compacts to which the Federal Government through congressional action would be a party. The character of such a compact would need much consideration but it could well comprise creating a joint board for the purposes of constructive conservation and thus secure the nation from the very real peril that will lie in the reckless exhaustion of our oil resources. With this in view, the Board is planning to have Dr. George Otis Smith, on its behalf, visit and interview the governors of three or four dominating oil producing states and learn their views upon such a proposal.

"'It believes that the above suggestion, if it can be consummated on constructive lines, should extend the life of our oil resources and give greater stability to the industry,

should vastly increase the returns to those states, and at the same time should protect the consumer.'"

"It was the unanimous opinion of the institute directors that the institute cooperate with the Federal Oil Conservation Board in the study of its program and in any further efforts toward the conservation of petroleum, and that it should lend its aid in the continued study of any undertaking which promises best to bring about this result."

Consider Extending Okla. Shut-Down

(By Telegraph)

TULSA, April 30.—Oklahoma occupies the keystone position in the world proration structure according to Edwin B. Reeser, president of the Barnsdall Oil Co., and the American Petroleum Institute, and Ray M. Collins, proration umpire of the Seminole district.

Both testified before the Oklahoma Corporation Commission in a hearing on extending the present proration order in the Seminole district until June 1. Several stated that the companies which they represented favored proration on a state-wide basis, but that the Seminole district was being unduly penalized in that it was being made to carry all the proration load for the entire Oklahoma-Kansas production district.

This objection was countered with the statement that a state-wide proration order on all fields with a daily per well average greater than 100 barrels would have been asked for at this time but for the seriousness of the present situation and the need for more time to perfect the state-wide program. There was little hope, testified Mr. Reeser who occupied the stand throughout most of the hearing, that the other oil producing states would be willing to continue prorating unless Oklahoma voluntarily kept its production within bounds.

California has some 175,000 barrels daily shut in, according to Mr. Reeser, and present plans call for the shutting in of an additional 50,000 barrels daily. With Oklahoma's biggest producing area operating at capacity it is not to be expected that California or the other states will continue to prorate resulting in a production far beyond demand in both the United States and in South America.

Umpire Collins testified that several recent strikes had added the threat of additional pools of possible major importance and that without the aid of proration in Seminole it would be almost a hopeless task to restrict drilling in these new areas to any appreciable extent.

The Goal

Latest figures on production in the principal districts in this country, compared with the 1928 daily average basis as reported by the U. S. Bureau of Mines. This latter is the figure to which output is to be held this year under the American Petroleum Institute restrictive program:

District	1928 Basis	April 27 1929
Okla.-Kansas	786,585	773,150
Texas-Ark. Louisiana	849,205	912,750
California	633,831	787,700
Bal. U. S.	190,391	177,050
Total U. S.	2,460,012	2,650,650

Socony-Vacuum Merger Referred to U. S.

CLEVELAND, April 29. — The Standard Oil Co. and Vacuum Oil Co. have asked the Department of Justice at Washington as to its attitude concerning a possible merger of those two companies. The request has been referred to the trust department of the United States district attorney's office in New York.

Both companies were former subsidiaries of the Standard Oil Co. of New Jersey and consequently both are subject to the provisions of the dissolution decree of 1911.

However, the decree does not prevent the merging of two or more non-competing units of the old Standard of New Jersey, but the government's attitude toward these two companies is sought before completing their consolidation, according to reports in New York.

Requa to Support Compact Plan

(By Telegraph)

WASHINGTON, April 29.—Mark L. Requa has become an ardent supporter of the compact plan for handling the overproduction problem. He is on his way to the Pacific Coast to urge cooperation of the industry in handling the situation by means of plans for what Secretary Wilbur calls the orderly development of Kettleman field. Mr. Requa had a talk with Secretary Wilbur Saturday evening and immediately thereafter started for the coast.

Secretary Wilbur said today that Dr. Smith had reported to him that the Governor of California had assured him of full cooperation in the compact plan of handling the situation and that the Kettleman operators were favorably disposed.

Secretary Wilbur said that after Dr. Smith returned to the east that a general conference on the subject of further plans would be held in Washington, to be attended by representatives of all the parties in interest, the Federal Government, the states and the industry.

Ask Hoover to Modify Oil Lease Order

WASHINGTON, April 29.—Senators and representatives from the Rocky Mountain oil producing states have taken the question of cancellation of leases and permits on the public domain up with President Hoover. They want the policy in that respect modified so that those who have spent any money on their holdings will not be deprived of them. Under the policy inaugurated in accordance with the President's announcement of March 12, the Department of the Interior has been cutting off all those, who, in the opinion of the officials in charge, have not spent as much as the officials think the law requires them to spend.

Representations in behalf of those who have spent money have been made to the President by Senators Warren and Kendrick of Wyoming, Senator Walsh of Montana, the "oil scandal prosecutor," Senator Pittman of Nevada, Senator Bratton of New Mexico and Representative Carter of Wyoming.

The congressional delegation which called on President Hoover said they were not speaking for any of those, lessees or permittees, who had done nothing. The congressmen agreed that such claimants, in effect, had abandoned their claims and had no equitable standing at all. As to those who had spent money they contended they had equitable standing which should be given recognition.

To Aid Safety Campaign

LOS ANGELES, April 25

California's oil industry is to be a big cog in the machinery of the California committee on Public Safety as it works to reduce highway traffic accidents.

Officials of the committee report that thirty or forty groups, state wide in their representation, consisting of oil operators, electric railways, city attorneys, city managers, county supervisors, etc., have entered into the spirit of the campaign, and are giving the committee's traffic accident studies the widest possible publicity for education purposes.

According to the committee traffic accidents in California caused a property loss amounting to $60,000,000 in 1928, and that while the state gasoline tax was three cents per gallon, the cost of traffic accidents was six cents per gallon, exclusive of loss of life and personal injuries.

First Week's Curtailment in California Is Estimated at 70,000 Barrels

By Paul Wagner
N. P. N. STAFF WRITER

DESPITE the fact that Umpire F. C. Van Deinse derives his authority for prorating California oil production solely from voluntary acceptance of the program initiated April 22 there had been made effective at the end of the week an estimated curtailment of approximately 70,000 barrels daily.

Viewed from any angle this must be regarded as a very satisfactory response on the part of the larger operators toward the initial curtailment of 129,530 barrels daily contemplated for the Los Angeles basin and coastal division fields.

Reports over the week-end indicated that the participation in the program of all major companies had persuaded several of the larger Independents to comply with the terms of the curtailment order and that others would fall in line promptly.

It is believed that by the end of the second week, May 4th, a very large percentage of the operators will be complying with the order and that a still larger percentage of barrels of production will be represented.

A purely statistical view of daily average production in the first week of California prorating would fail to appraise fairly the workings of curtailment and would be similarly confusing. Daily average production for the week showed a net decline of less than 10,000 barrels from a California total of approximately 795,000 barrels the week before prorating began.

The relatively small net reduction was brought about by a combination of circumstances. New completions which flow unrestrained for ten days before coming under prorating practice accounted for approximately 25,000 barrels of the state's daily average total for the week. Prorating did not take effect until Tuesday, hence there was curtailment in only five days of the seven. Mechanical difficulties that had to be overcome to insure proper handling of wells in pinching them served also to delay the immediate effectiveness of the full contemplated curtailment.

Probably no more than 30,000 barrels cutback was accomplished the first day. In the next four days curtailment grew progressively. By the end of the week it was estimated to have reached 70,000 barrels. However, the cutback spread over the full

F. C. Van Deinse

week in statistics such as issued by the American Petroleum Institute could account only for about 35,000 barrels daily average.

Balancing 25,000 barrels daily of new production against an estimated average cutback of 35,000 barrels there is little discrepancy between production statistics for the week and estimates on curtailment.

When a second prorating order becomes effective May 4 there will be included 15,626 barrels cutback in San Joaquin Valley fields bringing the contemplated California curtailment to 145,156 barrels, total.

The new order will make adjustments in allotted productions as compared with potentials established for the various fields and will set up current allowable figures on a basis intended to keep new production within bounds.

In the first general order the current allowable production for each lease or parcel of land equalled the alloted production. Subsequent orders will reflect the excess of production from any such lease or land parcel not held to its quota allotted production, thereby adjusting averages through the future working of allowables.

Inequalities that appear from time to time may be ironed out by the umpire through advisory committees of engineers who will establish potentials and counsel with regard to possible changes he may desire to make in percentage curtailments as between fields, etc.

One of the first problems that came up under California prorating was that of the Associated Oil Company which several weeks ago served notice on the Pacific Coast industry that its purchased and controlled crude had been insufficient under a restrained development policy for it to pinch back wells and at the same time take care of its refinery commitments.

The Associated's participation in voluntary prorating depended, therefore, on getting replacement crude by purchase for the quantity to be cutback. Originally the quantity needed had been approximately 3,500,000 barrels but this was reduced by new contracts and subsequent well completions to where only about 1,500,000 barrels additional was needed. When the Associated was first asked to pay a fifteen cent premium for such replacement oil it balked. Later, a major company supplied the oil at the posted market price.

Some of the operators have enough drilling wells at completion stages in competitively developed fields to maintain their production at recent levels in the face of their old full curtailments. This condition applies specifically in the Santa Fe Springs and Long Beach fields. Production declines are very rapid at Santa Fe Springs, so that over a period of weeks or a few months at most that situation will resolve itself into the natural thing to expect. Long Beach wells on the other hand exhibit staying qualities experienced in no other California town lot development area.

There are more than a hundred wells actively drilling in Long Beach and an even greater total at Santa Fe Springs. Long Beach production has been maintained above 180,000 barrels daily most of the time since last September and may not start into natural declines until mid-summer or fall based on present drilling.

A secondary peak production for Santa Fe Springs was due in June to

reflect deep zone drilling to the O'Connell and Clarke pays near and below seven thousand feet. Without prorating practice that peak might very well have gone above the 189,000-barrel daily average established by the higher Buckbee zone drilling for February.

Buckbee zone production at 5600 to 6000 feet shows rapid decline and the disappointment it gave to operators cause some of them to attempt discounting the lower O'Connell and Clarke zones, which range from 6300 to 7400 feet drilling depth on top of the structure.

The half dozen or so wells now finished in the prolific lower zones, however, average approximately 6,000 barrels initial production per well. Also the wells are distributed over the field so that they are now believed to prove the entire Santa Fe Springs producing area for deep zone exploitation.

Cementing troubles resulting from water temperatures ranging from 190 to 200 degrees Fahr. at casing points retarded completions in the beginning of deep zone work but these problems now are being overcome.

One of the most dangerous situations that may possibly affect prorating is the attitude of landowners in the Santa Fe Springs and Long Beach townlot areas. Many townlot wells are drilled under contracts calling for continuous development or maximum production. In California every lease contract represents an individual horse trade and requirements are often not escapable through compromise.

Potential oversupply exists in many California fields but generally speaking the acreage is susceptible of some measure of development control in most all districts except Santa Fe Springs and Long Beach. These are the real hot spots of the Pacific Coast. Without either of them, or with production declines materially effective in both the handling of the California situation would not call for any great degree of ingenuity.

The application of prorating practice, however, calls for the sharing of curtailment as equitably as may be possible between fields and districts as well as among operators. Therefore, it is contemplated that all properties in all fields shall figure in curtailment.

The rough and rugged problem of holding back Kettleman Hills development in California is nothing as compared with the topography of the region. This picture, taken from the air, was snapped at an altitude of 7200 feet

Seek Workable Plan to Curb Kettleman

(By Telegraph)

LOS ANGELES, April 30

AN IMPLIED threat of the interior department invoking Sec. 16 of the federal land law against wastage of oil or gas from permit acreage is before a committee of seven operators engaged in formulating a plan for curtailing Kettleman Hills development.

Director George Otis Smith of the United States Geological Survey, April 29, told Kettleman Hills' operators and permittees as representative of Secretary Ray Lyman Wilbur that Sec. 16 could be construed to enable cancelling of permits where there was an insistence on drilling and production without proper facilities being provided for elimination of gas wastage.

The interior department is seeking to stop all development and to shut in production from the 22 mile long structure which Dr. Smith described as the greatest oil field in the world of which we have knowledge. Gas produced in the field without its carrying a full maximum of oil lifting could be construed as wastefully exploited.

Operators in the field approved in principle two weeks ago the conservation program of Secretary Wilbur, but so far have been unable to reach decision on a plan for submission to the department. The question has been raised as to Secretary Wilbur's authority under the federal land law to create the moratorium he promised in consideration of operators and permittees suspending operations and production in the Kettleman Hills.

Federal Land Laws are rather positive about requirements made of permittees or operators holding contracts with them and the question has been raised as to the interior department's interpretation of them. Under various acts of congress it is possible for extensions to run a total of nine years when all requirements have been fulfilled, but there is no provision for further extensions.

In the case of certain valuable permits on the Kettleman Hills' structures the time limit of nine years will be reached this year, or in 1930. Operators and permittees feel that they require greater assurance than Secretary Wilbur can give if his proposal "that time shall not run against them" is to bring suspension of operators in the face of positive requirements set forth in the federal land law.

At the meeting in Los Angeles, attended by Dr. Smith, considerable expression of legal thought tended to the suggestion that if the government wants to protect the interests of all concerned now is an admirable time to take advantage of the congressional session to pass laws leaving no doubt of the secretary's authority.

After its meeting with operators and permittees the special committee of seven charged with devising a plan for handling the situation held an afternoon executive session. No decision was reached. After studies to be given the problem another general meeting of operators and permittees will be held for final approval of any plan to be submitted to Washington.

Late Market Changes

CLEVELAND, April 29.—On May 1, New York state, the last remaining tax-free state outside of Illinois, gets a gasoline tax of 2 cents. Gasoline prices will be advanced on that date. Another state to get a tax raise is Minnesota, where the tax goes up 1 cent also on May 1, making total tax 3 cents.

* * *

(By Telegraph)

LOUISVILLE, April 30.—On May 1 Stoll Oil Refining Co. will advance price of Oil City, Ky. crude 10 cents per barrel, making new price $1.65 per barrel.

is possible for extensions to run a

Make Better Gasoline, Sell It Nearer Home, Eastern Refiners Urged

By Paul Truesdell
N. P. N. STAFF WRITER

CAMBRIDGE SPRINGS, Pa., April 26 GASOLINE must henceforth be considered as a major product of the refineries operating on Pennsylvania grade crude oil, instead of as an incident to the manufacture of lubricating oils, if the refineries are to flourish.

The gasoline should be marketed in territories which can be reached by favorable freight rates from the Pennsylvania, West Virginia and Ohio plants, as compared with freight rates from group 3 and other refining centers. Such territories offer possibilities for consumption of all the gasoline output of the Pennsylvania crude refineries.

But in order to sell the gasoline in these territories, or to sell it at all advantageously, the refiners must make the kind of gasoline from their paraffin base crude, which will meet competition of products made from Mid-Continent, California and Gulf Coast crudes, from the standpoint of anti-knock value. They must make the kind of gasoline the motorist of today demands.

In order to make their industry yield a proper profit, the refiners of Pennsylvania crude should compile, exchange and study figures showing production of crude and the current output and stocks of products, to the end that they produce and market their goods with the minimum possible economic waste, as distinguished from physical waste.

These points were emphasized by speakers at the spring meeting of the National Petroleum Association held at Cambridge Springs April 25 and 26.

Economics, manufacturing and marketing were so closely linked up in the discussions and papers at the meeting that it was impossible to state where one started and another ended. All three, in fact, seemed to be regarded as logically interrelated and not to be considered separately in studying with the view of improving it, the situation in which the refiner of Pennsylvania crude finds himself.

Establishment of mutual confidence in each other among the Pennsylvania refiners was pointed out as a necessity if the best results are to be obtained in improving conditions. Cooperation is an overworked word but it was given a new meaning at this meeting as signifying real interchange of information and real trustfulness of each other. Fayette B. Dow, general counsel, and L. L. Long, Waverly Oil Works, stressed this particularly.

The basis on which to predicate refinery operations, it was pointed out by N. H. Sanger, Pure Oil Co., is to chart the easily predicable probable increase in gasoline demand during a coming year. With this factor known, refinery operations, theoretically at least, could be held in line with that demand.

To Visit Standard Plant

At the session devoted to manufacturing, P. S. Tarbox in charge of that department read a telegram from J. S. Harrison, vice president of the Standard Oil Co. of Ohio in charge of refining, inviting the National Petroleum Association members to visit the Standard of Ohio refinery in Cleveland on May 24.

President E. M. Lyons of the association stated that the invitation will be accepted with thanks.

Mr. Sanger discussed what he called a new science, that of "commercial graphics." He showed a number of charts in the presentation of his paper, "Peaks and Valleys," in which he showed clearly the course of gasoline prices from 1918 to 1928 with the reasons for the "peaks and valleys."

John D. Gill, Atlantic Refining Co., in a discussion of "More Profit from Less Waste," painted a clear picture of the opportunities that lie before the Pennsylvania refiner to market his gasoline near home. Mr. Gill pointed out by means of graphs which are reproduced on another page, the enormous gasoline consumption, compared with production in the same districts, in territories into which gasoline could be shipped from Pennsylvania refineries at a lower freight rate than it could be laid down from group 3, the Atlantic seaboard or the Gulf coast.

Mr. Gill showed that one of the chief reasons for the Pennsylvania crude refiners' predicament is the constantly narrowing margin between the cost of their raw material and the price their finished products will bring. He cited figures in support of this.

Before 1927, he stated, the margin between cost of crude and realization from finished products averaged above $2 a barrel. In that year it declined to $1.90 a barrel; in February, 1928, it declined further to $1.67 a barrel. From that point it rose gradually until in September, 1928, it reached a figure of $2.30 a barrel, which was a better average margin, Mr. Gill said, than that for any year since 1923.

Refinery capacity had been expanding, the speaker pointed out, until last fall, refinery activity outran the production of Pennsylvania crude. For this reason the margins began last fall, after reaching the high point, to shrink again. This shrinkage has continued until in February, 1929, the spread was down to $1.55 which Mr. Gill said, is an unprofitable margin.

RELIEF for the refiners may come through increased crude production due to the drilling of many wells ahead of the water drive in the Bradford field, this year, he believes.

Mr. Gill emphasized that there is no physical waste in the marketing of petroleum products but that there is economic waste when more stations are built, more pumps installed or higher transportation costs paid in the marketing of products than are necessary to bring them into the hands of the consumer.

"The Tendency Toward Higher Viscosity Motor Oils and How It Affects the Refiner" was discussed by Charles McLean, Canfield Oil Co., who questioned the soundness of the present tendency of the automotive engineers to demand heavier and heavier oils for their cars. Mr. McLean's paper is published elsewhere in this issue.

Consideration of marketing and economical aspects of the situation was given during the first session of the meeting, following the address of

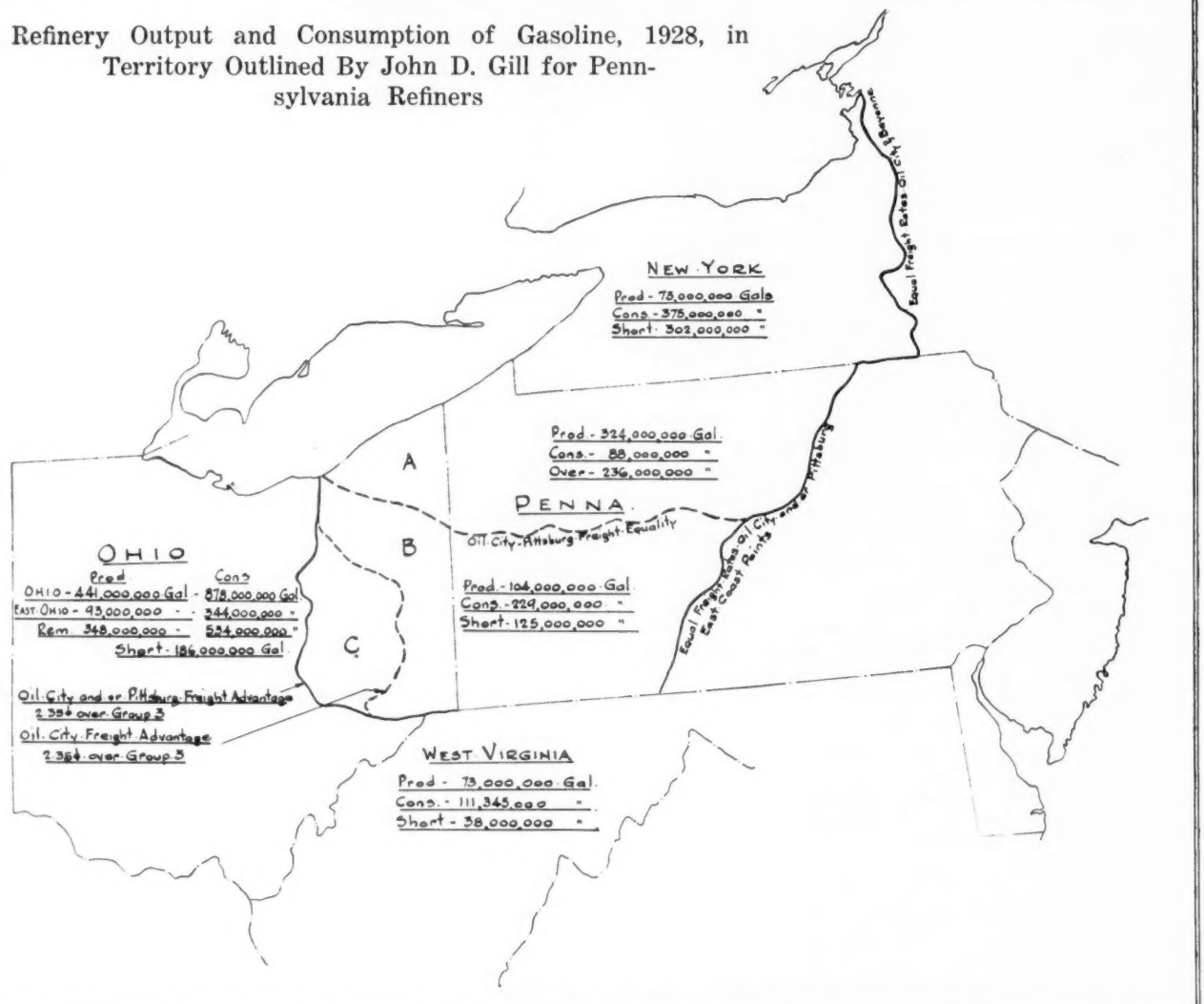
Speaker Urges Pennsylvania Refiners To Sell Gasoline

PENNSYLVANIA refiners may find their "acres of diamonds" right in their own back yards. Such was the opinion of John D. Gill, marketing economist for the Atlantic Refining Co. in his address before the semi-annual meeting of the National Petroleum Association at Cambridge Springs, Pa., April 25.

Displaying charts outlining the territories in which Pennsylvania refiners can expect to compete advantageously with Group 3 on the west, the Gulf coast on the south, and the Atlantic seaboard on the east, Mr. Gill showed very definitely where gasoline consumption in four refining districts out of five in the Appalachian area was far in excess of the total production of refiners in that area.

The area, roughly speaking, is

Refinery Output and Consumption of Gasoline, 1928, in Territory Outlined By John D. Gill for Pennsylvania Refiners



the president, E. M. Lyons, president of the Tiona Refining Co. The marketing session was presided over by N. H. Weber, vice president of the Pure Oil Co. and a vice president and trustee of the National Petroleum Association in charge of the department of trade and commerce.

P. S. Tarbox, Independent Refining Co., vice president and trustee of the association in charge of the department of manufacture presided over the Thursday afternoon session.

Detonation, realized as one of the major problems confronted by the Pennsylvania refiners in the manufacture of gasoline, came in for considerable attention. C. R. Wagner, Pure Oil Co., described the Gyro process, developed by his company for vapor phase cracking. This description was published on page 40a of the April 24 issue of NATIONAL PETROLEUM NEWS.

Mr. Wagner stated that the product of this process has a value as a blending agent 80 or 90 per cent that of pure benzol, from an anti-knock standpoint. MacLean Houston read a paper in which he stated that his company, the United Refining Co. of Warren, is making a gasoline of considerable anti-knock value by using a fractionating method of its own.

"Restoration of Fuller's Earth" was discussed by Karl W. Nichols, Kendall Refining Co. Mr. Nichols stated that his company has found it uneconomical to burn the clay after its efficiency has been reduced to about 65 per cent of its original value. He stated also that the rotary multiple hearth roasting furnace is not a foolproof piece of equipment but requires care and skill in its operation. His paper is published elsewhere in this issue.

"New Tendencies in Refining" were discussed by the writer.

Herbert A. Ross, in discussing "The Cooperative Engineering Problem," stated that improvement of combustion conditions in a plant is very difficult to achieve unless the men in

In This Territory

bounded on the east by an equal freight rate line with Bayonne and other east coast points which averages 1.68 cents and on the west by a 2.35 cent freight rate line to which Pennsylvania refiners may ship in competition with Group 3 if the usual 2 cent differential in prices, f.o.b. refinery, is maintained.

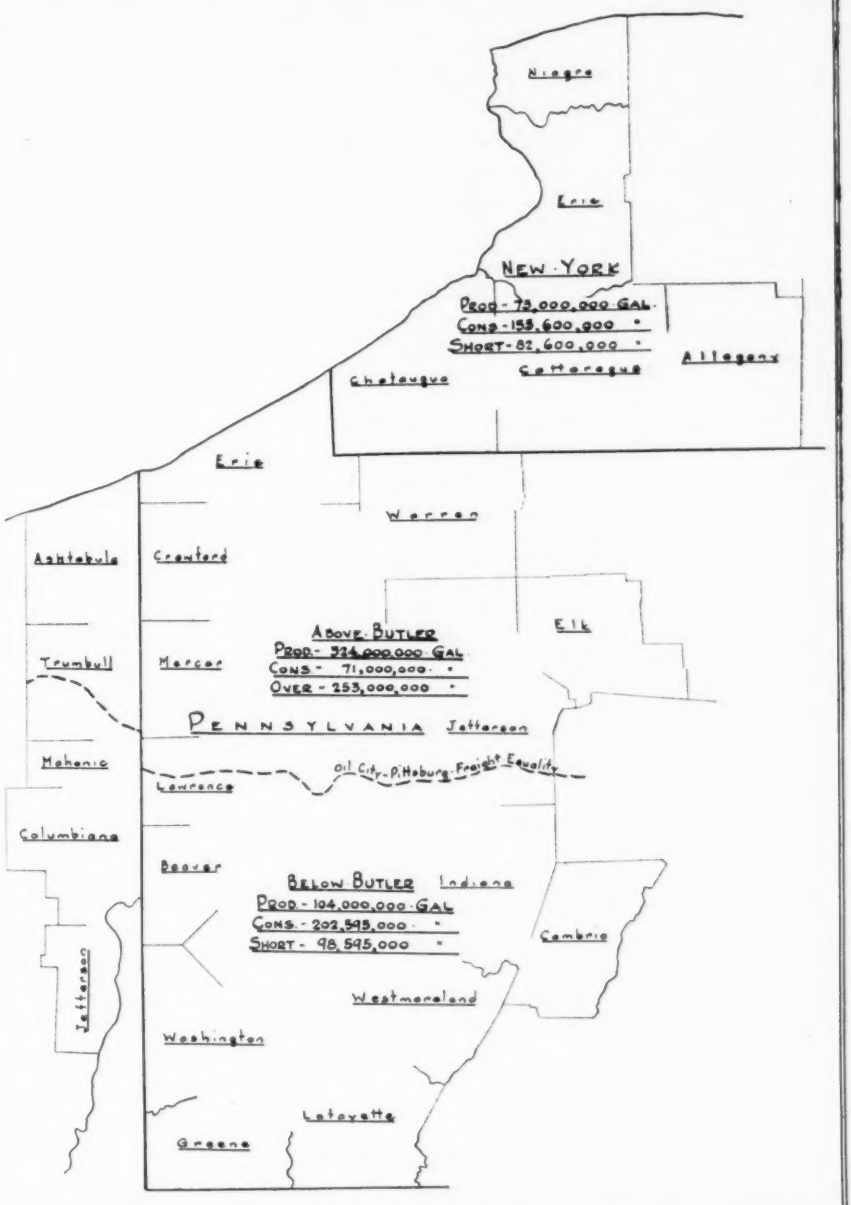
In that territory, the total gasoline consumption in 1928, as estimated by Mr. Gill was 1,147,000,000 gallons, whereas the total production of refiners in that area was only 667,000,000 gallons, leaving 480,000,000 gallons of gasoline consumed which they were letting go to outside refiners.

Limiting the freight rate to 1.30 cents a gallon from Oil City and Pittsburgh both east and west, Mr. Gill outlined a territory in which gasoline consumption exceeded production by 4,595,000 gallons in 1928.

Part of this "close to home" business was going to outside refiners, Mr. Gill said, because Pennsylvania refiners were not concentrating their sales efforts on the territory logically theirs. The extra freight cost in shipping outside the boundaries of his own territory represented just so much less per gallon which the Pennsylvania refiner could just as well pocket himself if only he were to concentrate on his immediate territory, raising his f.o.b. refinery price by virtue of his offering a better quality product.

Pennsylvania refiners have paid too much attention to specialization and too little attention to generalization, Mr. Gill said.

The far sighted oil man is one whose business is varied to the extent that he does not have to depend upon favorable market conditions for any one class of oils for the prosperity of his business, Mr. Gill said.



Refinery output and consumption of gasoline, 1928, within 1.30 cent freight limit of Oil City and Pittsburgh. Consumption of 76,400,000 gals. in the 5 counties in Ohio is omitted from the above chart.

---

the plant are sold on the work and their support is enlisted.

The fellowship supper was held Thursday night. L. C. Jamieson substituted for Fred G. Clark in charge of the entertainment program.

During the Friday morning session which was in charge of the department of economics, accounting and statistics, Henry W. Ralph, accountant, discussed "Pricing the Inventory." Written discussion of his paper was given by M. A. Brewster, Pennzoil Co. Mr. Ralph's paper was published on page 40d of the April 24 issue.

Two engineers from the Pennsylvania sanitary water board assured the refiners that the state is ready to cooperate with them and take a reasonable attitude in working to prevent the pollution of streams by oil or chemical wastes from refineries.

R. A. Wotowitch, trustee in charge of the fire and safety marshals of the association read a paper on "Self Preservation." He praised the accomplishments of the fire and safety marshals and predicted pointedly that "unless they are stopped by their executives," the marshals will do much more good work.

James H. Herbert, Standard of Ohio and president of the fire and safety marshals discussed the work of the groups and stated the cause of some refinery fires that have been reported during the year. His paper is published elsewhere in this issue.

Later two teams, one representing the Kendall Refining Co., Bradford, and the other made up of men from the Conewango, Warr Penn, Wilburine, Viking and Superior refineries at Warren, contested for medals presented by O. P. Keeney, former president of the association. The contest was won by the Warren team.

Houston Dunn, general manager of the National Petroleum Mutual Fire Insurance Co. spoke on "Contingent Liabilities" at the Friday morning session, Friday afternoon was devoted to traffic matters, the meeting

being presided over by Willis Crane.

Extracts from some of the papers presented at the meeting follow:

"Cooperation In and With the Department of Trade and Commerce"—L. L. Long, Waverly Oil Works:

"Through the efforts of the department of trade and commerce we now receive a weekly report of stocks of finished product. It serves a good purpose. When you receive it, do you phone or call on another refiner who has the same report and discuss it with him? If it were an inventory of your own plant that showed an excessive supply of neutrals you would talk it over with others in your company as to market conditions and how to dispose of it. If the association report shows an excessive supply of one or more products, we should properly analyze this statistical information and collectively consider methods to market it. * * *

"As a group we make similar products and consequently have similar problems to combat. Why not discuss these things frankly with one another and in this way build up confidence? How often have you believed John Doe, the buyer, when he told you he could buy from Blank refinery (perhaps your next door neighbor) at a lower price? So often, no doubt, that it has become second nature to take John Doe's word as fact. You seldom, if ever, called the Blank refinery to verify his price, although in doing so you would have built up confidence, and by learning that the buyer had misinformed you, (which is sometimes true) have profited immeasurably.

"A quarter cent a gallon is just $20 a car, but such a saving on a car a day for a year's period is in excess of $7000. Would you pay even a third of that sum, or $200 a month, in order to save it all? I believe you would and yet in this association you have the department of trade and commerce to function and with your assistance, to correct these and other conditions at no extra cost to you.

"So let us begin now and through confidence in one another, cooperate with the exchange of information, ideas, market practices and prices to the end that our department may not be a weak link, but the strongest in the association chain."

"Peaks and Valleys"—by N. H. Sanger:

"In 1918, our gasoline demand averaged about 300 million gallons a month. Ten years later, in 1928, it did better than 1,300 million gallons a month. * * * In 1918 gasoline prices were steady due to voluntary stabilization through the war board. Then the war ended but as most gasoline demand was domestic there was no oversupply. Prices remained firm.

"In 1920 there was a sharp price increase and all through the summer refiners had a 15-cent margin above the posted price of crude. But in the last quarter of the year, stimulated operations at home and in Mexico ran headlong into the gathering storm of general business depression and there was the inevitable decline. U. S. Motor, group 3, dropped from 23 to 13 cents and Mid-Continent crude from $3.50 a barrel to $2. Things began to look better toward the end of the year, however.

"In 1922 there was a steady improvement up to mid-year but stocks got top-heavy and the gain was more than lost.

"In 1923, eastern refiners prepared for a big season. Simultaneously California found great new pools of crude and dumped great quantities of crude and gasoline on the east coast. The result was 6½-cent U. S. Motor, group 3.

"1924 was a distress gasoline year, and 1925 started out the same way, getting some relief in mid-year, but California gasoline again flooded out the improvement.

"Gasoline stocks were top-heavy at the start of 1926 but improved gradually so that U. S. Motor hugged the 10-cent mark all year.

"1927 we shall speak of in a whisper. Stocks were built to preposterous heights by refiners during the winter and they suffered in consequence, the price being pegged at 6 cents the latter part of the year.

"Due to refining restraint, excess stocks were not built up during the winter of 1927-1928 and 1928 was a comparatively good gasoline year."

"What of 1927? * * *

"Not as favorable as last year. * * * Too much production increase during the year. I look for a U. S. Motor price line in between the 1927 and 1928 line, but with more the trend of the 1927 line. However, even now the refiners can help immeasurably by showing discretion in still runs."

"Cooperative Possibilities Developed In A Study of Combustion"—by H. A. Ross:

"A group of members in this association nearly four years ago undertook a cooperative experiment in combustion economics. The value of this adventure is proven by the statement that as of Dec. 31, 1928. The coal and equivalent fuel burned per barrel of crude run in their plants has been reduced 69.5 pounds. In other words, the fuel consumption of some 22 representative plants was 196.5 pounds per barrel of crude run in 1925.

"In 1928 this consumption was reduced to 127 pounds per barrel in 14 refineries. Extending over this 3-year period, the actual value of the fuel saved is $519,960. This saving in a fuel bill of over one-half million dollars in three years of cooperative effort is a concrete value.

"What about the intangible values of better yields and products; the improved mechanical condition of equipment and further extension of its useful life; the enhanced value of the 'human machine' because he is better informed and can therefore work for you with greater intelligence? Isn't it reasonable to believe that such improvement is of greater monetary value than the fuel which has been saved? Cooperation has made this possible.

* * *

CLEVELAND, April 27.—The New York contingent at the National Petroleum Association's semi-annual meeting at Cambridge Springs this year was a little larger than usual. Aside from such regulars as O. P. Keeney and Dick Wotowitch, among those present were E. G. Barber, Standard Oil Co. of New Jersey; Don Hoffman and Harry Borst, both of the Tidewater Oil Co.; L. C. Campbell, Chelsea Oil & Supply Co.; and T. A. Therkoff of F. A. Marsily & Co., Inc.

New Members

Companies welcomed into membership in the National Petroleum Association at the meeting are: Ohio Oil Co., Standard of Kentucky, Standard of New Jersey, Solar Refining Co., Lima, O. and Standard of New York. The Standard of Ohio has been a member for some time.

California Engineers Meet

LOS ANGELES, April 26.—A meeting of the Development and Production Section, A.P.I., California District, will be held Tuesday, April 30, at 6:30 p.m., in the Banquet Room of the Chamber of Commerce building, Los Angeles.

The program committee has arranged for the discussion of the following subjects:

"Explanation of Gas Conservation Law as Applied to Field Operations," by A. L. Weil, chief counsel for General Petroleum Corporation.

"A survey of Factors Believed to Affect the Courses Followed by Drill Holes," by Martin Van Couvering, petroleum engineer.

"Practices for Drilling Straight Holes and Remedying Crooked Holes," by R. D. Elliott, manager of Oil Field Service Company.

Should the Present Tendency Towards Heavier Motor Oils Continue?

By Charles McLean*

(Presented before National Petroleum Association, Cambridge Springs, Pa., April 25)

THE tendency to higher viscosity motor oil seems to be very marked and I thought it might be well to talk about it and try and get the oil man's view. Are we tending in the right direction? If so, how far will the tendency go? I can add nothing to what you all know but it might be worth while to have a little discussion on the subject.

We can all remember when motor oil of 150 viscosity @ 70 was considered a good motor oil, then some of the motor manufacturers concluded that a heavier oil was necessary on account of crank bearing failures.

Motor Oils in the Pennsylvania grade 200 viscosity @ 70 and the Mid-Continent grade, 300 viscosity @ 70, for a long time seemed to give good satisfaction then Pennsylvania marketer concluded to meet the 300 Viscosity Western Oil with a 300 Viscosity Pennsylvania Motor Oil and this came in quite general use.

Owing to the variety of motors, the varying seasons from summer to winter, different viscosity grades were established and two or three years ago these settled down to viscosities about as follows:

Light Motor Oil	200 Viscosity @ 100
Medium Motor Oil	300 Viscosity @ 100
Heavy Motor Oil	400 Viscosity @ 100
Ex. Hvy. Motor Oil	550 Viscosity @ 100

I am speaking more particularly of the Pennsylvania grades.

The dilution problem was talked of and it was felt necessary to increase the viscosities somewhat so as take care of dilution: so another year the general viscosities were about as follows:

Light Motor Oil	250 Viscosity @ 100
Medium Motor Oil	324 Viscosity @ 100
Medium Heavy Motor Oil	400 Viscosity @ 100
Heavy Motor Oil	550 Viscosity @ 100
Ex. Hvy. Motor Oil	650 Viscosity @ 100

and now I think it is quite general that the Sales Department want to step up these grades again. Where will this stop? Are we on the right track? My view is not changed—I still believe that the lightest oil that will stay on the job is the best oil. Certainly a light oil is required to work into an accurate fitting bearing or cylinders.

In the first place, when on account of crank bearing failures a heavier oil was required, conditions were different than today. This was the time of the three-bearing crank-shaft. Now when seven-bearing crank shafts are in quite general use it should be a different lubrication problem owing to the lessened strain on each individual bearing.

Higher compression motors and higher speeds should call for heavier oils but heavier oils have already been adopted. 300 Viscosity @ 100 in the Pennsylvania grade is surely a good viscosity medium oil. Lower end point gasolines and ventilated crank cases, together with higher temperatures, have almost eliminated the crank case dilution problem. Remember that motor oils were already stepped up to take care of this.

Why the tendency to heavier oils? Has there been any complaint with the lighter grades? I think not. Some bright oil salesman found that if he sold a heavy oil where a medium had been used and asked his customer to note the amount of oil used, he could point to this oil as an economical oil because it would not show much oil used. Then other oil salesmen heard of this plan of selling and started to follow suit.

A heavy oil came to be the grade used for test purposes and the amount of oil consumed seemed to be the only test applied. Perhaps the public also got to expecting heavy oils due to quite extensive use of Texas Oils that have a high viscosity @ 100, but on account of the breakdown a comparatively low viscosity @ 212, these oils appear to the ordinary user as heavy oils.

Are we not making a serious mistake to sell a motor oil so heavy that it shows little or no diminution of oil in the crank case in use? If motor oil is not diminished in the crank case then it surely shows that the oil is so heavy that it is not working up in the cylinders and is not lubricating cylinder wall, and surely use of a heavy oil like this will cause loss of power on account of worn and scored cylinders and friction on account of lack of lubrication, as, of course, a heavy oil of this character will not work into the bearings until they are worn sufficient so that they are no longer a tight fit.

Do not heavy oils absolutely put a load on a motor? Remember the first snappy winter days when you still had the summer grade of motor oil in your crank case how the starter will hardly turn the motor over fast enough to start the car? This was heavy oil made heavier by cold weather or an exaggeration of the load put on a motor by use of heavy oil.

The smooth and quiet running of a motor using heavy oils is an evidence of the load on the motor. It is quiet because it is not idling but pulling against the heavy oil.

An item in S.A.E. Journal, Vol. XIV, No. 3 March 1924, page 307, has been handed to me in support of the theory. The item is headed "Mechanical Friction as affected by the Lubricant."

Item	Mean temperature of oil and water of	100	128	152
1	Brake horsepower developed	3.40	4.70	4.95
2	Indicated horsepower developed	10.10	9.90	9.20
3	Mechanical efficiency %	33.7	47.5	53.8
4	Friction Power Loss %	63.3	52.5	46.2
5	Percentage of vis. @ 100 retained by oil at higher temperatures	100	52	35
6	Fuel lb. per brake h.p. hour	1.95	1.36	1.28
7	Fuel lb. per indicated h.p. hour	.655	.640	.670

Item 3 = Item 1 + Item 2.
Item 4 = 100% — Item 3.

You will note that this shows large friction loss and high fuel consumption when oil is heavy and that both of these are cut down as viscosity of oil is reduced, while efficiency is greatly increased as viscosity of oil is increased.

For my own part I believe that a Pennsylvania oil of standard flash, 300 Viscosity @ 100, will lubricate any water-cooled automobile motor if the oil level in the crank case is maintained.

Instead of the oil men meeting heavy oil with heavy and heavier oil, had we not ought to try and arrive at a proper viscosity for automobile lubrication? Of course, the various models of cars call for differences in viscosity grades.

The auto manufacturers have sensed the fact that there was a difference in light, medium and heavy

*Vice president, Canfield Oil Co., Cleveland, O.

motor oils put out by different manufacturers and made from different crudes and have established grades for various motors of their manufacture which they class by S.A.E. numbers grading by 10's, from 10 to 60. These grades are fixed by establishing viscosities of motor oils for the four lower grades @ 130 temperature, and viscosities for the two higher grades @ 212 temperature.

The NATIONAL PETROLEUM NEWS has gotten out a chart showing the oil requirements of various makes of cars in accordance with the S.A.E. numbers.

S.A.E. recommendations are as follows:

S.A.E. Vis. Number	Viscosity Range* Saybolt Universal Seconds @ 130°F.	@ 210°F.		Penna.
10	90/115		which would be	150/210
20	120/150		which would be	220/290
30	185/220		which would be	370/460
40	255	70	which would be	550
50		75/95		
60		105/120		

*Oils with viscosities falling between the ranges specified shall be classified in the next lower grade.

These S.A.E. viscosities have been set with a view to average oils, that is, motor oils made from Texas, Mid-Continent and Pennsylvania crude, which show a varying breakdown in viscosity from 130° temperature to 212, which is probably more nearly the temperature of the actual use, and if this range of viscosity is proper for average oils, I would feel that Pennsylvania oils could safely be fixed at the low viscosity of the range with perfect safety because of the superior heat resisting qualities of Pennsylvania oils. Then, too, the lowest viscosity that can safely be used will give the best lubrication because an oil of this character can better slip into the bearings and around the rings.

Now to the practical side: Pennsylvania crude seems to command a premium because of the superior quality of motor oils produced from it. Must we not use all the motor oil that we can produce from this crude and not the heavy grades only? If we get to using heavy auto oils we cut down the proportion of motor oil produced from the crude and increase the cost of the motor oil produced.

If the lighter viscosity neutral oils cannot go into the motor oils then the value of this product must go down to the level of non-viscous neutral oils, as outside of motor lubrication there is not sufficient demand now for these oils to sustain a premium price.

Taking an average value of Pennsylvania products for last two years, then this lighter product that is rejected must be marked down 20c per gallon.

Let us say that we can get 30 per cent of all grades of motor oil from Pennsylvania crude. If, due to demand for heavy motor oils the volume of motor oil is cut down to 25 per cent, then this 5 per cent which is cut off would be reduced in value approximately 20c per gallon, which would advance the average cost of the remainder 4c per gallon. This is about where we are now.

When the average yield from Pennsylvania crude is 25 per cent motor oil and due to increasing demands for heavy motor oil this is cut down to 20 per cent, then the cost of this 20 per cent would advance another 6c per gallon. This is only the actual difference to get the same yield of price from the crude and does not take into account the fact that each 5 per cent cut off lessens the available supply of Pennsylvania Motor Oil 16½ per cent.

This will show the danger of pushing heavier oils faster than the demand and not taking advantage of the full value of our Pennsylvania product. This is high flash with low comparative viscosity and high heat resistance.

Roasting of Spent Clay Most Important Item in Filter House Operation

By Karl W. Nichols*

Presented at National Petroleum Association Meeting, Cambridge Springs, Pa., April 25

THE restoration of fuller's earth is, I believe, the most important part of percolation filtering, as it has a most direct bearing on filtering costs. Due in part to the tendency toward more highly filtered oils and consequently higher costs, more attention than heretofore is being given to filtering equipment. The advent of the multiple hearth roasting furnace, with the comparatively high initial investment required, has also served to direct attention to this process, and I believe that still closer scrutiny will show that many improvements can be made and much money can be saved.

To be able to make these improvements, we will have to have more records than are kept in the average filter house at present, for some of our methods are based on memory, some on prejudice, and some just grew.

Certainly the main purpose of any filter house is to filter the product as economically as possible and to know how to accomplish this, we must have before us a fairly accurate picture of what is being done from week to week and month to month, not merely a record of throughput or an overall figure at the end of the year.

Even if the figures as set up do not give us the correct cost per gallon for each grade of oil filtered, nevertheless they will give us a chance to make comparisons, which often show up wrong operating methods. To illustrate—we were able to reduce by 20 to 25 per cent the amount of oil left in the earth before washing, after noting from our record that this figure was too high.

When the multiple hearth furnaces (in this case the Nichols-Herreshoff) were first installed, some of us tried to see how many burns we could obtain, and tried to reclaim old earth which had previously lost its usefulness, but most of us overlooked, for a time at least, the most important result, namely, the high efficiency which can be maintained in the filtering medium. It sounds well to be able to say that we can get 35 or 40 or 50 burns, and we can, but, in doing so, we may be losing money by unnecessarily limiting our throughput.

As the earth gradually loses efficiency, or filtering value, it must reach a point at which it becomes more economical to discard it and use fresh earth. This point will vary ac-

*Superintendent, filter house, Kendall Refining Co., Bradford, Pa.

cording to conditions, but with us it is about 60 to 65 per cent at present, so we try to get as many burns above that figure as we can.

It is here that the roasting furnace has proved itself. In our Paris furnace, the efficiency of the earth declined to the 60 per cent mark in about four burns, whereas in the Herreshoff we get from 20 to 25 burns, in both cases adding 3 to 5 per cent make-up in the earlier burns. This higher average efficiency has decreased the oil and naphtha losses, which are higher than some of us have realized.

We have at present a 16-foot diameter, eight-hearth Herreshoff furnace, a Paris, which we use for drying small batches of green earth, and are building a 16-foot, 12-hearth Herreshoff with one air-cooled bottom hearth. The eight-hearth Herreshoff is equipped with an eight-point pyrometer, with the thermocouples in the gases of hearths one to six. The seventh point records the temperature of the cooling air leaving the central shaft, and the eighth is in the calcine outlet.

The operation of the Herreshoff furnace has been very ably covered by MacLean Houston in his paper before The American Petroleum Institute at Chicago, with which paper you are, undoubtedly, familiar, and our ideas correspond so closely that some of the following may seem like repetition. What we term a normal batch of earth, well washed and steamed dry, contains about one and a half to three gallons of oil (soluble in 86 A. P. I. gravity straight-run gasoline) and tars (soluble in benzol) per ton. An oily batch may contain 14 or 15 gallons of oil and tars per ton, or enough to support combustion. In burning a dry batch, we try to handle one and a half to two tons per hour at the following temperatures, with a shaft speed of 2.5 revolutions per minute: 1st hearth—600 degrees Fahr.; 2nd—800-850 degrees Fahr.;3rd —950-980 degrees Fahr.; and 4th—900-950 degrees Fahr. These are the burning hearths—the fires being on the 2nd and 3rd generally—and from the 5th to the 8th the earth is cooled until it leaves the 8th hearth at 200 to 300 degrees Fahr. Such a batch will be run with little or no free burning, but, if any occurs, it will be on the 2nd hearth. The temperature on the 4th hearth will be below that of the 3rd.

We do not try to hold to these temperatures when burning earth which contains more than the usual amount of oil and carbon. When, because of poor steaming, some naphtha remains in the earth, it will ignite on the first hearth. Poor washing leaves too much oil in the earth and this will burn with a smoky, sooty flame on the second hearth, while a filter, which, though well washed and steamed, contains more carbon than usual will burn with a blue flame on the fourth hearth, and the temperature here will be higher than on the third, and the lower hearths will be hotter than usual.

We believe that the temperatures which can be used vary with the amount and kind of combustible material left in the earth to be burnt. When earth contains a large amount of carbon, this carbon, once ignited, will carry the recorded temperatures to 1050, 1100, or even 1150 degrees Fahr., apparently without injuring the earth, but, if sufficient heat was applied externally to raise the earth to these temperatures, it would certainly be overburnt.

Thus each batch presents a separate problem, and for consistently good results we must rely on the ability, faithfulness and good judgment of our furnace operators, as well as the cooperation of the filter house operators in supplying, so far as possible, well washed and steamed earth.

We do not attempt to get a perfect burning on each batch, but believe that a batch which has not been burned at temperatures high enough to drive off all of the carbon and therefore is a dark gray color, will give nearly as good results as one burnt to the usual light gray, and there is less chance of causing fusion by overburning. We find that color alone is not an indication of proper burning. When burning less than a ton per hour we can get a reddish brown color with moderate temperatures, but this earth seems to give no better yields than the light gray.

As the central shaft and rabble arms of this furnace seem to be its most vulnerable points, we believe that an oversize fan, or better, two fans, should be used to supply extra cooling air at times when, because of oily or gassy batches, which will appear now and then, it is difficult to keep the shaft and arms cool, and at the same time burn the regular quota of earth. The inlet to the fans should be protected against the possibility of earth spillage being drawn in.

In such a case, the earth might be deposited at the end of the arms, causing a stoppage of the cooling air. This happened to us and the point of the arm quickly became overheated and started to sag and twist. A wide-awake operator saw it and prevented the loss of the arm. It is understood that the same thing caused the loss of several arms at the same time in one furnace just recently.

If steam is used at all, the piping should be arranged, with drips or other means, so that it would be hard to get a slug of water in the furnace. A batch containing a quantity of naphtha will, when fed into a hot furnace, create enough of a disturbance to cause an inexperienced operator, as most of them necessarily are, to lose his head.

This furnace is not a fool-proof machine, fed as it is with such widely varying material, but it is very responsive to control, and a good operator can handle almost any kind of a batch which might be given him, provided the furnace openings are tight and the air supply ample.

Our furnace has been in service nearly two years, during which it has burned more than 20,000 tons of earth, and has given no trouble that required the loss of more than a few hours of burning time. Two or three arms have, due to careless operation, been sagged an inch or so, but can still be used. We believe the life of the arms can be increased by changing those on the second and third hearths with the ones on the sixth and seventh hearths, as the former get much more heat. The rabble teeth have worn perhaps a quarter of an inch, and, though none have been replaced for wear, they are rather brittle, and two or three have been broken in handling. The bearings have given no trouble.

It seems certain that still better results can be obtained when we learn more about operating these furnaces and much can be learned by an exchange of experiences.

Pierce and Peck Visit Cleveland in Plane

CLEVELAND, April 27.—L. D. Pierce, president of the Pennsylvania Petroleum Products Co., Providence, R. I., and T. A. Peck of the lubricating oil department of the Shell Petroleum Corp., St. Louis, flew into Cleveland from Detroit April 23 aboard the Shell's tri-motored Fokker airplane Golden Shell. Included in the party were St. Louis business men who are promoting an air show in St. Louis in May.

The party met with automotive and aeronautical engineers of Cleveland and surrounding territory at the Cleveland Chamber of Commerce.

Mr. Pierce, who was returning from a meeting of the trustees of the Independent Oil Men of America at Chicago, left the party at Cleveland and proceeded to Oil City, Pa., where he is interested in the Empire Oil Works Co.

Mr. Peck and the St. Louis party were joined at Cleveland by Miss Amelia Earhart, the first woman to fly across the Atlantic. They proceeded to Pittsburgh where another meeting in behalf of the St. Louis air meet was to be held.

Review of Late Production News

PRODUCTION and imports of crude were at a lower rate in the week ended April 27. Daily average output for the country was 2,650,650 barrels, a decrease of 21,200 barrels from previous week, according to the American Petroleum Institute.

Crude oil imports amounted to 287,428 barrels daily, compared with 304,000 barrels week ended April 20. This is a decrease of 16,572 barrels daily. Total new crude supply for week ended April 27 was 2,938,078 barrels, a decrease of 37,772 barrels.

Largest changes in production occurred in California fields, Santa Fe Springs gaining 10,000 barrels, while Long Beach fell off 9500 barrels on daily average. Seal Beach fell off 7500 barrels and Huntington Beach 2500 barrels. Elwood-Goleta gained 3500 barrels.

St. Louis pool in Oklahoma declined 7550 barrels. Pierce Junction gained 5250 barrels and Winkler county 5150 barrels. Pecos county fell off 3700 barrels and Salt Creek 8200 barrels.

California

SANTA FE SPRINGS, with 29,800 barrels of new oil from the O'Connell sand, gave curtailment officials some anxious moments this week. Many more wells like the Wilshire Annex Oil Co. Koontz No. 3, producing from the O'Connell sand, would upset all present proration plans.

There are 267 projects heading for zones below the Meyer sand, including 43 wells that have been drilled to various depths and are now standing idle; of these 190 are drilling and 117 still short of, or in, the Nordstrum and Buckbee zones, and 71 wells already below 6000 feet. These last named 71 wells are the ones that may hamper future curtailment plans for this field.

Long Beach was a surprise to many, as production totals in this field showed a gain during last week of over 20,000 barrels, which will bring the daily average over the 200,000-barrel mark. Seven new drilling permits issued in this field and reports from geologists that the producing sands are rather extensive, augur well for the future development of this district.

Elwood Terrace had an increase of only a thousand barrels of new oil to make its total output 30,000 barrels. This results from the curtailment plans adopted by the Barnsdall-Rio Grande interests for their new producers.

Some important developments are expected at the Lawndale and Inglewood fields soon. Jim Pollard, according to all reports, should have his Inglewood well on production before long. On a recent production test, made over a period of five hours, it flowed at a rate of 850 barrels per day.

Lawndale operators are awaiting the outcome of other production tests on three wells that showed some possibilities during the past week. These wells are: Smith Peck No. 4, Ethyl Oil Co.'s O'Gorman No. 1, and Petroleum Securities Co.'s Brown No. 2.

Although the first two wells mentioned are now producing only gas they showed considerable kick for a time. Petroleum Securities-Brown is being placed on the pump, because it seemed to have a sufficient quantity of oil to make a producer, but lacked the gas to flow it.

Oklahoma-Kansas

A 5000-BARREL well extending the productive area in Sec. 5-7N-7E Hughes county, one location to the southeast was one of the features of the week. Mid-Continent Petroleum Corp.'s No. 4 Smith in the SE NW NE of Sec. 5 had an initial production of about 240 barrels an hour from the Wilcox sand topped at 4223 and drilled 4234.

The two wildcat strikes in Pottawatomie county made during the preceding week developed into important wells. Simms Oil Co.'s No. 1 Laster SE NE NE of 19-6N-4E is making better than 3100 barrels per day natural from the Viola lime. The well having been deepened another foot to a new total depth of 3699.

The other wildcat the Martin and Irwin, Sinclair et al. No. 1 Kelly is a Hunton lime producer two miles north of the St. Louis pool. Located in the SE NE NE of 2-7N-4EE the well is making about 100 barrels an hour from the Hunton at 3750 and drilled to 3777.

Of principal interest in Kansas was the opening to production of the Shell Petroleum Corp.'s No. 1 Lygrisee the Sedgwick county wildcat in the SE SE NE of 15-26S-2E. The well is swabbing and flowing about 100 barrels hourly.

Texas, New Mexico, Louisiana

A RANK wildcat gas well featured the West Texas-New Mexico area the past week. Vacuum Oil Co. test on the line between Sec. 13 and 14 Twp. 17-34 Lea County had 3,000,000 cubic feet of gas per day at 3848 to 3852 and an additional 7,000,000 cubic feet per day from a brown sand at 3855 to 3860. The well is drilling ahead.

Another test, also in New Mexico is showing for an oil in Sec. 23-25-36. It is the Cranfill and Reynolds No. 1 Wilson which flowed 118 barrels in 8 hours from a brown lime topped at 347 and drilled to 3400 feet. The well is shut down for orders.

Wyoming, Montana

THREE small completions in Kevin-Sunburst and one good well in Pondera which extended the producing area of the field materially, marked developments in the northern Montana fields for the week. Many wildcat operations got under way by both major and independent operators.

Billy Creek well in Wyoming drilled to oil production by the Carter Oil company will probably be tested next week, the company having succeeded finally in getting the hole cleaned out. This well is in a field hitherto proved only for gas.

Officials of the Producers & Refiners corporation announced last week that they planned many tests of permit land this summer, but that they would also surrender many permits on which they would not be allowed to drill because of the Hoover oil conservation policy on government land.

In eastern Wyoming the LeFaivre syndicate of Detroit will drill a wildcat well on Miller Hill structure, the first test ever to be started in this territory.

Oil Companies May Aid Tire Dealers In Building Super Stations

Night at a tire company built super service station in the home of rubber tires. The station is that of Russell Harp, Inc., in Akron, O.

AKRON, O., April 27

By Roger B. Stafford
N. P. N. STAFF WRITER

JOINT development of super service stations or automobile department stores by oil companies and tire manufacturers or tire dealers, may be the next step in motor oil and gasoline merchandising to put that branch of our industry on a more profitable foundation.

Since Harvey S. Firestone of the Firestone Tire & Rubber Co. visited the Mid-Continent several weeks ago and announced that his company intended to spend millions of dollars on service station outlets, the large oil companies have been watching closely all the moves the country's leading tire manufacturers are taking toward putting their dealers in the service station business.

Oil company marketing officers have journeyed to Akron since Mr. Firestone was in the southwest and several have intimated that they too had enough money to back good merchants of automotive requirements to erect better places of business. Among the names that are mentioned in some tire company offices here are being vitally interested in a joint development of one-stop service stations, are the Shell Petroleum Corp., The Gulf Refining Co., and The Texas Co.

Most of the tire companies are not anxious to go into the service station business either directly or by giving a helping hand financially to their dealers. However, if a dealer shows he has the business ability to handle a larger mercantile enterprise, it now looks as if he will not have to look far for monetary aid from either tire companies or oil companies.

Some tire companies are backing their dealers in widening their service for automobiles. From tires the dealers have taken on batteries, wheel aligning, brake adjusting and relining, and the sale of such supplies that a motorist needs regularly such as light bulbs, emergency repair kits and so forth.

With the growth of the oil company owned super service station some of the more successful tire dealers have erected super business places and besides selling the goods and services they had sold in their stores with rear room service stations, they are now offering gasoline and oil, complete car lubrication, washing, and occasionally some repair service.

The tire companies have watched the development of the super service station in California and virtually all of them and their merchandising experts believe that the super station where all the ordinary needs of a motor car can be fulfilled, is the modern method of car service.

No longer, they believe, should the motorist be required to drive all over a city to get his wants supplied. They have found nothing to prove to them that Marshall Field and John Wanamaker were foolish when they built department stores.

Firestone has openly declared for the tire company backed service station. Rumors are afloat everywhere that Mr. Firestone, Henry Ford, and an Independent refiner have formed an alliance to go into the super service station business. Their program according to the rumors is to build an ocean terminal at Tampa, Fla., and 200 super stations in Florida. These 200 stations are to be part of a chain of 2000 in the United States. Whether a series of depots is to be built across the country has not been revealed.

Mr. Firestone returned to Akron this week from a trip through the southwestern and Californian oil fields but he declined to grant interviews. It is known his engineers have been gathering information about refinery operations and the cost of making gasoline.

Goodyear Tire & Rubber Co. and B. F. Goodrich Co. are known to have assisted some of their dealers but whether the assistance was financial or just counsel in the development of a suitable type of station in a desirable location, has not been made public.

Miller Rubber Co. and Seiberling Rubber Co. favor the super service type of station for their dealers. Miller is reputed to be back of the

Instant Tire Service which has super service stations—one in Akron that is doing a large business. It was denied that the Miller company was the owner of the Instant stations or was financially involved directly in them.

Seiberling favors stations where the motorist may get five-point service. At the Seiberling office this service was said to consist of tire sales and repairs, gasoline and oil, chassis lubrication, car washing, and batteries. The company had on file pictures and plans of stations built by the Kier-Nichols Garage at Houston, Texas, and the Russell Harp, Inc., station in Akron. These concerns are its dealers.

Miller has just published a book of 11 plans of super service stations the cost of which is estimated at $4000 to $60,000 without cost of land, equipment, or concrete drives. A Cleveland architect and his engineering staff made the plans after a study of service stations, the Miller company says in the book's preface. The company's attitude toward the super service station subject is set forth as follows:

"Merchants in the tire business everywhere are becoming more and more interested in better store locations and more efficient building layouts. Retail tire selling today requires adequate service facilities available to motorists for they are demanding something more than just a tire and a price. They want tires applied properly to the car; they want them inspected periodically and they also like to buy some of their automotive necessities at the same place they purchase tires. They prefer not to go to one place for tires, to another for gas, oil and lubricants, and to another for batteries, etc.

"The one-stop service station—i.e., the place where the motorist can be taken care of on his various automotive requirements—seems to be becoming the vogue."

THE Miller company is financially interested in some dealer's stores but that interest usually has resulted from distress or mortality of tire dealers which have been heavy the last year. The same may be said of every other tire manufacturer in the city and is in part the reason why some tire manufacturers are striving to get their dealers into more profitable lines.

One man who has made a close study of the tire industry expressed the tire situation in about these words:

"Dealers used to mark up their tires 35 to 40 per cent but those days are past. They are now working on much closer gross margins. They must learn that to make a reasonable profit on their investments that they must give more service and sell more things. They must learn that they can make only 4 per cent out of this thing; 3 per cent out of that; perhaps only 2 per cent out of this, and so on. They must learn that they will have to operate automotive department stores to make a business living, letting several departments carry the load that is involved in a good business location.

That the tire business in itself is suffering from too many outlets, a large percentage of them inadequately financed or being operated by poor business men, is indicated by these statistics which E. S. Babcox, publisher of India Rubber & Tire Review, has on his tongue's end: "Last year there were 90,000 tire dealers; this year there are 80,000. The number may fall to 65,000 in the next year. About 12,000 dealers are doing approximately 60 per cent of the tire business."

The larger oil companies in the near future may help to finance the super service stations, at least two department heads of two of the larger Akron tire companies believe. The tire companies would pick some good dealer, one who has demonstrated that he has the ability to move ahead in the business world, and let the oil company put up a station or go into partnership with the dealer. The latter arrangement has been found to be successful, one manufacturer said.

So far no particular oil or gasoline has been recommended by any of the tire companies. The oil industry, they say, is one of their best customers and it would be unfair for them to make any recommendations. Most of them do suggest that their dealers handle a gasoline that is well established in the dealer's community and also the popular brands of motor oils.

In case of joint development of super service stations by oil companies and tire dealers or possibly battery dealers, it may be safely assumed the products of each oil company involved would be handled exclusively.

Two Small Trailer Tanks Deliver 6986 Gallons in Day

Staff Special

CLEVELAND, April 29

THE National Refining Co. April 26 put into active delivery service in Cleveland the two small semi-trailer gasoline tank units drawn by Ford Model AA 1½-ton truck tractors. S. A. White, purchasing agent of the National reported these results:

	Davis-Fruehauff Trailer Unit 794-gal. Tank	Columbian-Whitehead & Kales Unit 754-gal. Tank
Friday, April 26		
Hours operated	8	8
Trips made	5	4
Miles covered	53½	48
Gallons delivered	3970	3016
Gasoline consumed	7 gal.	7 gal.
Saturday, April 27		
Hours operated	5	4
Trips made	3	2
Miles covered	36	30
Gallons delivered	2382	1508
Gasoline consumed	4 gal.	3 gal.

No record was kept of motor oil consumed. No deliveries were made of lubricating oil although the Davis unit has running board tanks and can boxes on each side of the gasoline tank, and the Columbian unit has a rack on each side for a 55-gallon drum of motor oil and tanks built into the mud guards.

The units Friday averaged seven miles to the gallon of gasoline consumed but Saturday one unit averaged 10 miles per gallon and the other averaged nine miles.

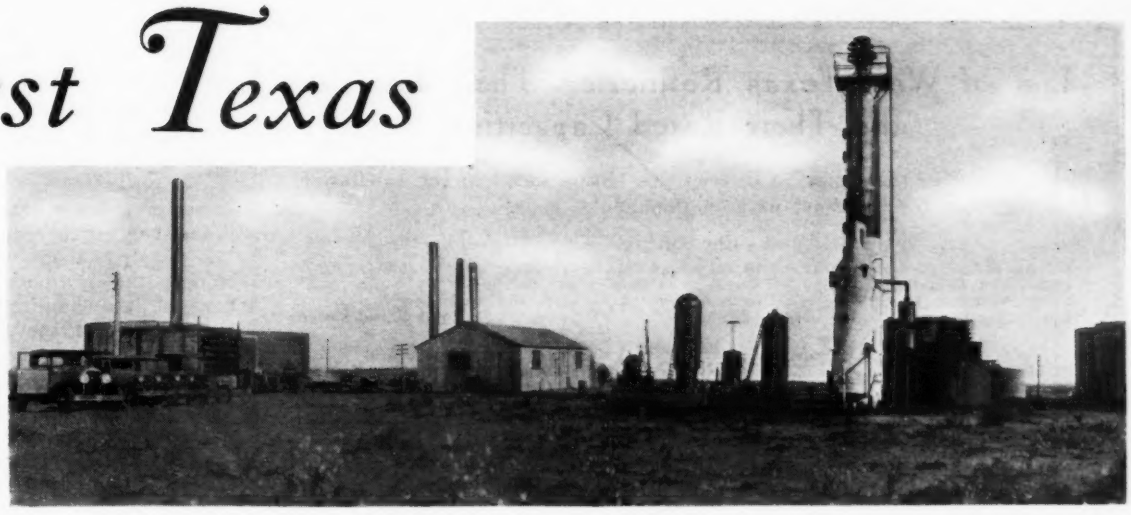
The drivers of the two units had never before operated Ford trucks and it was discovered after the Friday operation, Mr. White said, that they had not turned the Ford choke to the right to make the carburetor mixture leaner after the engines had become warm. This failure caused an unnecessary consumption of fuel.

The trucks were engaged in making full load deliveries of gasoline only. The Davis unit was engaged in shorter hauls and the Columbian in slightly longer hauls. There was no reason for this, Mr. White said, as it just happened that the truck dispatcher routed the Davis tank on the shorter hauls.

Tests of the hill climbing ability of Reo, Dodge and International truck tractor units will be made Friday, May 3, on the Cedar road hill at Gates Mill, O., east of Cleveland, where tests of six tractor units were made April 17. Results of the April 17 tests were published on page 32 of NATIONAL PETROLEUM NEWS for April 24, 1929.

The May 3 tests will be made with the two semi-trailer tanks of the National Refining Co. which were used in the April 17 tests.

West Texas



Panorama view of the refinery of the Amarillo Producers & Refiners Corp., Pyote, Tex.

What Threats and Promises It Holds For the Refiner and the Industry

By Paul Truesdell
N. P. N. STAFF WRITER

CLEVELAND

OUT of the windblown sands of West Texas are sprouting new opportunities, new possibilities and new problems for the refining industry.

The principal opportunity is that afforded by the enormous potential production of the West Texas fields to manufacture great quantities of gasoline and fuel oil.

The 29 plants in the West Texas area are probably operating at a little more than half their rated capacity. It is believed that this is considerably less than half the rate at which they could put crude through if circumstances dictated running at their utmost capacity.

The most important possibility offered by West Texas from the refiner's standpoint seems to be that some of the crudes produced in that area are going to furnish excellent raw material for the kind of motor oil that is demanded in the automobiles of today and of tomorrow.

Some of these, although not to be described as paraffin base crudes, have traces of paraffin and some of the characteristics of paraffin base crudes that are said to make possible the manufacture of motor oils of high viscosity at high temperatures and good fluidity in a cold crank case.

Work that has been done on the lubricating possibilities of these crudes will be discussed in a later article.

The West Texas crudes offer the refiner the opportunity to make a gasoline of high anti-knock value, which he is doing, and also the opportunity and the incentive to educate the trade to disregard gravity in buying gasoline. This he is trying to do, in some cases, but the refiners generally report little success.

Just now the West Texas refining industry is offering the natural gasoline manufacturers an excellent market for their product. Very little gasoline is moving from the West Texas refineries that does not contain more or less natural gasoline—usually a considerable percentage. This is not because the gasoline needs it from a volatility standpoint, the refiners explain, but because for a given volatility, the gravity of West Texas gasoline is low.

A.P.I. gravity of 54 to 56 is the rule for U. S. Motor gasoline and the buyer is still very likely, in ordering, to specify "58-60 U. S. Motor." To meet this gravity requirement the refiner must blend some natural gasoline with his product.

Very little cracking is now being done in West Texas plants although probably considerable West Texas crude is being cracked at big Gulf Coast plants to which a good deal of it is being transported by pipe line.

Principal problems of the refiner of West Texas crudes right now are in connection with treating his gasoline and, it seems secondarily, with corrosion of equipment. It appears that corrosion may turn out to be less of a problem in connection with the handling of these crudes than was expected. Of course, when cracking gets under way on a large scale, it may bring with it a flock of corrosion problems that are not now foreseen.

Big Springs, El Paso, Pyote and Pecos now give promise of being leading refining centers in the West Texas area, with several smaller ones. In fact they are the principal refining centers now. All except Pecos have more than one refinery operating and it is reported that at least two more plants are to be built there.

Present rated capacities of West Texas plants really mean little. As before stated, probably every one of them could run much more crude with present equipment than they are running and some of them could run twice as much. Besides that, the plants are of such a type that new units of the same sort as those at present functioning could be erected in a few months to increase the refining capacity to any desired figure. Some refiners already are planning extensions.

How much crude is run in the plants of the West Texas area proper during the next year will undoubtedly depend upon the manner in which crude production is handled. It is a fact, though, that the Shell plant at Houston will be ready in a month or two to run 24,000 barrels a day or more and that it is planned to transport West Texas crude through the same pipe line that supplies the Houston refinery for the New Orleans Refining Co.'s Shell plant at Norco, up the river from New Orleans. This plant has been enlarged and is getting ready to run considerable crude.

THE Transcontinental Oil Co. has a refinery site on the Gulf and may begin shortly the construction of a 30,000-barrel a day plant to run on West Texas crude.

Whatever the amount of crude run, it is certain that cracking will produce a large amount of additional gasoline during the coming year. Several companies are now completing cracking units which will be in operation within the next few weeks.

The Humble Oil & Refining Co. and the Magnolia Petroleum Co. are operating cracking plants, the former in its McCamey and San Antonio refineries and the latter at Luling. The Humble is using Cross and Tube and

List of West Texas Refineries, Their Location and Their Rated Capacities

Plants in the Amarillo district are not included in the tabulation, as they run for the most part on Panhandle crude.

Big Spring		
Cosden & Co.	12,500 barrels, four Jenkins cracking units building	
Richardson Rfg. Co.	6,000 barrels, one Jenkins unit building	
Great West Rfg. Co.	8,000 barrels, combination skim and crack	
Big Spring Rfg. Co.	2,500 barrels.	Total 29,000 barrels
El Paso		
Pasotex Petroleum Co.	12,000 barrels combination skim and crack (building)	
The Texas Co.	3,500 barrels	
Rio Grande Oil Co.	3,000 barrels	Total 18,500 barrels
Pyote		
Amarillo Prod. & Rfg. Co.	3,000 barrels	
Pecos Valley Rfg. Co.	2,000 barrels	
Tonkawa Petroleum Co.	3,000 barrels	Total 8,000 barrels
San Antonio		
Humble Oil & Rfg. Co.	4,000 barrels Cross and Tube Tank cracking processes	
Grayburg Oil Co.	5,000 barrels Dubbs 1400 barrels a day	
		Total 9,000 barrels
McCamey		
Humble Oil & Rfg. Co.	15,000 barrels Cross and Tube and Tank processes	
		Total 15,000 barrels
Pecos		
Burford Oil Co.	5,000 barrels Two Jenkins units building	
		Total 5,000 barrels
Somerset		
Pioneer Oil & Rfg. Co.	1,500 barrels	
Witherspoon Oil Co.	2,000 barrels	
Texas Pet. Products Co.	1,500 barrels	Total 5,000 barrels
Colorado		
Col-Tex Refining Co.	9,000 barrels	Total 9,000 barrels
Wickett		
Blue Bonnet Rfg. Co.	6,000 barrels	
Wickett Refining Co.	1,500 barrels	Total 7,500 barrels
Sweetwater		
Gulf Refining Co.	5,000 barrels building	Total 5,000 barrels
Big Lake		
Big Lake Refining Co.	2,000 barrels	Total 2,000 barrels
San Angelo		
San Angelo Refining Co.	2,500 barrels	Total 2,500 barrels
Midland		
Midland Refining Co.	3,000 barrels	Total 3,000 barrels
Luling		
Magnolia Petroleum Co.	2,000 barrels Burton and Cross cracking units	
		Total 2,000 barrels
Del Rio		
Del Rio Refining Co.	2,500 barrels	Total 2,500 barrels
Brownwood		
Central Texas Rfg. Co.	1,000 barrels	Total 1,000 barrels
Mirando City		
Misko Refineries Inc.	1,000 barrels	Total 1,000 barrels
Laredo		
Tex-Mex Refining Co.	700 barrels	Total 700 barrels
		Grand Total 125,700 barrels

Tank units and the Magnolia the Burton and Cross. The Grayburg Oil Co. has two Dubbs units at its San Antonio plant, recently taken over by the Indiana Oil Co.

Apparently, judging from the type of cracking plants being installed, gas oil will be the principal cracking stock of the West Texas refineries for some time to come at least. With the exception of a combination skimming and Holmes-Manley cracking unit being erected at El Paso, all the cracking plants I saw under construction are Jenkins units.

Cosden & Co. are finishing up four with a daily capacity of 2000 barrels each of gas oil; Richardson Refining Co. is completing one 2000-barrel unit and the Burford Oil Co. is putting in two 2000-barrel Jenkins stills.

Gasoline, gas oil and fuel are the principal products of the West Texas refineries. Some of the plants are making a little kerosene, enough to take care of their local trade, but not many. Gasoline yield averages about 25 per cent on the crude.

Fuel oil is the bread and butter of some of the plants. Without contracts with the railroads, agreeing to take certain amounts of fuel oil at an agreed price over an agreed period, some of the plants would not have been built, it is said.

And the fact that the railroads are taking so much fuel oil from the refiners is the reason, probably why development of truck hauling of products on a large scale, has made comparatively little progress. In return for buying their fuel from the refiners, the railroads naturally expect to get the hauling business of the refineries and they do get it almost altogether.

The gasoline is marketed locally insofar as the market can absorb it—which is comparatively little in this sparsely settled region—and the balance is shipped into many parts of Standard of Indiana territory and elsewhere. Gas oil is taken partly by Texas public utilities for gas making purposes and part is shipped to gas plants and other industries in the same territories in which the gasoline is marketed.

The West Texas refiner, it should be remembered, is processing a crude oil of which the posted price is 65 cents a barrel while the Mid-Continent refiner pays a posted price of $1.20 for crude of 36-36.9 A.P.I. gravity.

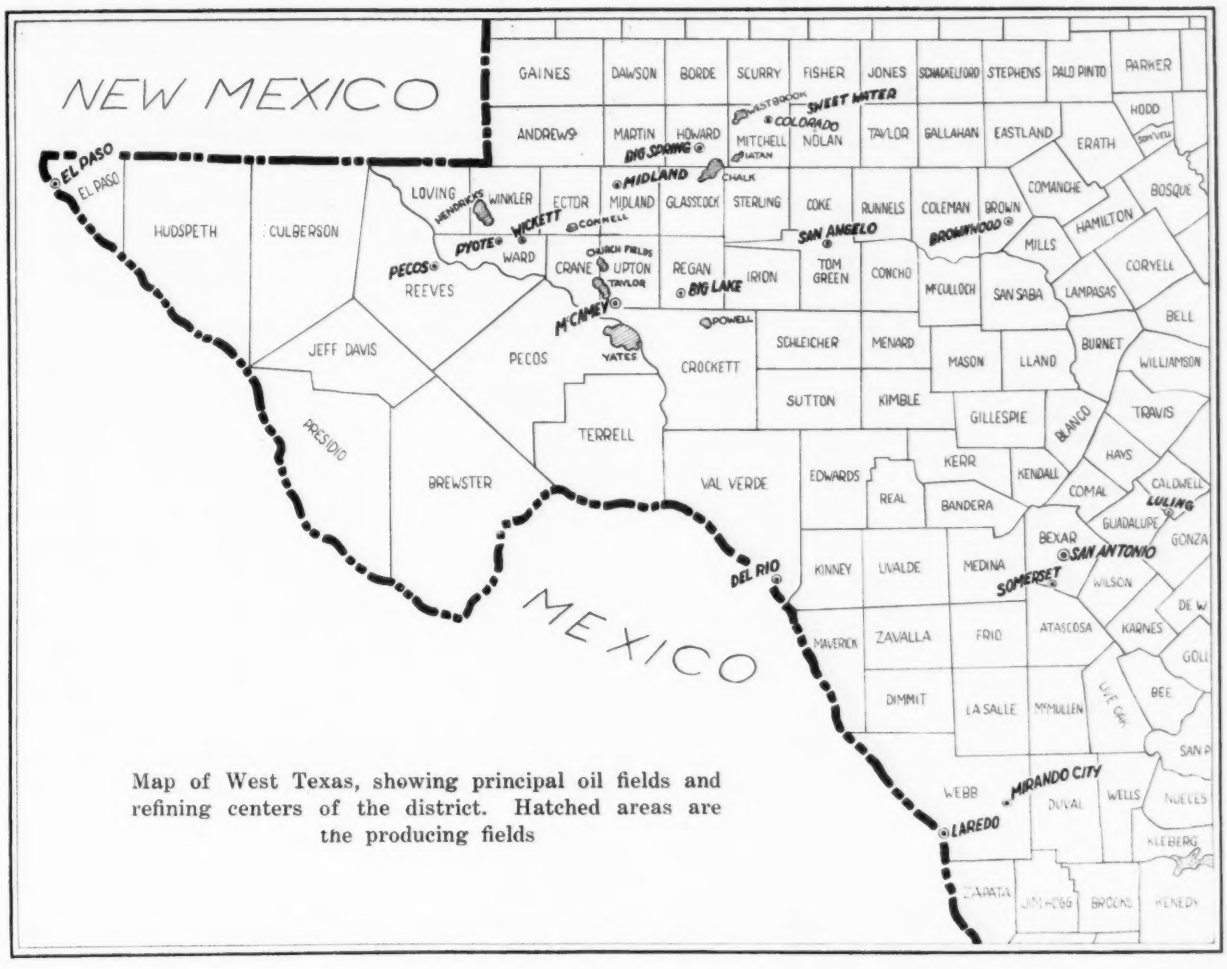
The full possibilities that may develop from the cracking of West Texas oil are not known. Probably the chief reasons why the refiners in this territory are generally planning to use gas oil rather than residuum as cracking stock are that the railroads and industrial plants offer a good market for the fuel oil and also the sulfur concentration would be higher in a residual stock than in an overhead stock.

THE Jenkins process has a well developed method of feeding lime into the system with the oil charge which it is hoped, in West Texas, will tend to neutralize the hydrogen sulfide as well as prevent the formation of hard coke, which was the original purpose for which the lime was used in the process.

No report has come to our attention as to results from cracking West Texas residual oil, except the experience of the Imperial Refining Co., at Ardmore which is on another page in this issue. This was rather unfavorable.

Refiners are expecting to get excellent anti-knock value in their gasoline as their cracking operations increase. The gasoline derived from straight distillation has an anti-knock value averaging about that of a mixture of 28 or 29 per cent of benzol blended with U. S. Motor Mid-Continent gasoline, it is stated.

Refiners who are installing cracking plants estimate that by blending the quantity of cracked gasoline they will produce with the product of their crude stills they will get a gasoline



Map of West Texas, showing principal oil fields and refining centers of the district. Hatched areas are the producing fields

of the order of 35 per cent benzol in U. S. Motor gasoline or possibly higher.

The standard prescribed by the Ethyl Gasoline Corp. for Ethyl gasoline is 40 per cent benzol in 60 per cent Mid-Continent gasoline.

The Humble has rather standardized for West Texas use on a shell still unit that has a small bubble tower where the vapor dome is on the ordinary shell still. This was designed by Humble engineers.

There are various types of pipe stills in use in the West Texas plants. Some are standard units which are familiar in other refining districts and some are the design of the refinery engineers of the individual companies. However, in general, the layout of the West Texas refineries is much alike. Usually a distillation unit consists of a pipe still, a flash tower, a bubble tower and a condenser, with suitable pumps and auxiliary equipment, of course. Some of these plants will be described in later articles.

At some of the refineries more or less cracking is accomplished through running the pipe stills under some pressure, although it is usually comparatively low pressure.

In most of the refineries, the gasoline is treated with caustic soda and doctor to enable it to meet the copper strip corrosion test and in some cases acid treatment is used. Some continuous treating plants are used but batch aptatos used for circulating treatment predominate.

Water supply for the refineries, quantitatively offers no problem. It is found in abundance at 150 to 400 feet. Most of the refineries have their own wells which are flowed by compressed air or pumped with deep well pumps. However, the quality of the water usually leaves much to be desired. In some refineries the water is very hard. Sometimes it is so "light", that is, full of sodium sulfate, that it is hard to keep it in the boiler. It foams and bubbles like soda water, which it is.

Principally on account of the water situation, the West Texas refineries probably use less steam power per barrel of oil handled than those of any other region except in the Amarillo district. Electric power is used in the plants to an extent unusual in refineries I have seen. The Texas power companies have been on their toes as the refineries developed and have strung transmission lines hither and yon over the territory. I don't believe there is a refinery so remote that it has not electric power within reach.

Centrifugal pumps direct connected to individual motors are the rule in the West Texas plants. The chief exceptions are loading pumps which are sometimes of the rotary type, capable of bucking heavier pressure, and hot oil pumps which are generally steam driven.

All the refineries have boiler plants, of course, and some of them use more or less steam in distillation, but the boilers usually are of small horsepower compared with the size of the refinery and they are generally run at a low rating because of the water.

In these most modern of refineries because they are the newest, the condensers used are almost entirely of the box, submerged coil type, with American radiator sections or pipe coils. In some of the plants the receiving house is done away with altogether and the gasoline streams taken off from a separator drum as is done with some cracking systems, for fear of hydrogen sulfide poisoning. Various other methods are used in different plants to guard against this danger. Some of these will be described in later articles in this series.

The refiners have done a good job, it appears, in safeguarding their men.

Very few deaths from hydrogen sulfide in refineries are heard of and that means that much care and thought have been expended in devising and installing protective methods.

One of the most severe problems is how to get the hydrogen sulfide and other sulfur compounds out of the gasoline in order to make it meet the copper strip test and come within the 0.10 per cent tolerance allowed in the U. S. Motor specifications.

In addition to the problems of treating the gasoline to remove harmful sulfur compounds, corrosion of refining equipment is likely to cause plenty of grief, refiners believe, as the plants get older. Most of them have been running only a few months. Some have just started up so it is likely that the full possibilities of corrosion troubles have not yet showed up.

Two kinds of corrosive constituents have appeared. One, of course, is hydrogen sulfide which is found in all the crudes, and the other is hydrochloric acid formed by the hydrolysis of magnesium or sodium chloride. The latter is a new thing in West Texas. It is not yet general but salt water is appearing in the crude from some of the wells and it is this that makes the trouble.

The next article, to be published in the May 8 issue will discuss some of the work that has been done in investigating the possibilities of making good lubricating oils out of West Texas crudes and later articles will take up descriptions of individual plants.

Recommend Publishing Weekly Refinery Statistics

NEW YORK, April 25

THE compilation and publishing of weekly figures on refinery operations in this country has been recommended to the American Petroleum Institute by a special Advisory Committee on the Institute's Division of Statistics.

The proposed figures would show crude runs to stills, gasoline stocks and gas and fuel oil stocks for the various refining districts of the country as now set up by the U. S. Bureau of Mines in its monthly report.

The compilation would be made up from returns from individual companies for the week ending at seven a. m. Saturday morning and published as soon thereafter as possible, in about the same manner as the institute's statistics on crude production by districts is now compiled and published weekly.

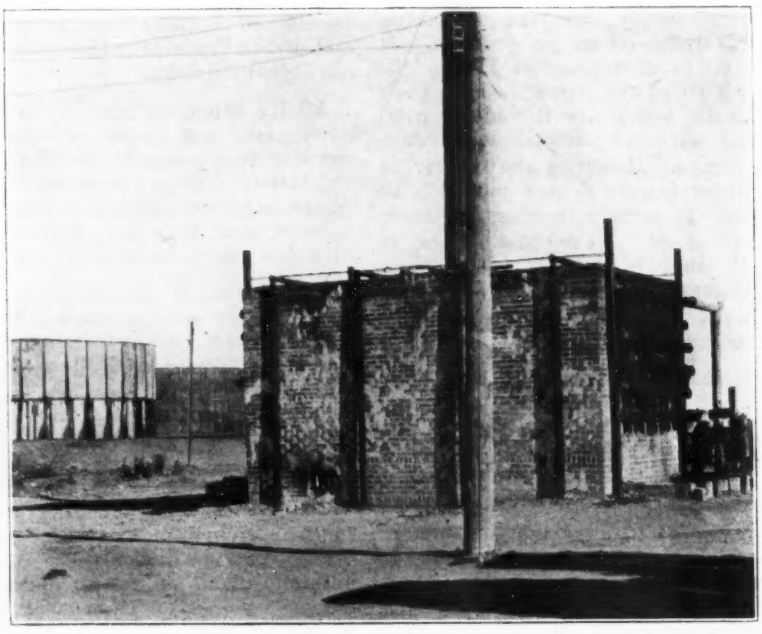
The special committee's report to Executive Vice-president Boyd also suggests that, at some future time, attention also be given to the reporting of stocks of unfinished gasoline and naphthas at refineries, including gasoline contained in distillates which are lighter than illuminating oil; also to the reporting of gasoline and naphthas at all bulk terminals of not less than 50,000 barrels capacity; and also all gasolines, naphthas or unfinished equivalent in water borne transit to refineries or bulk terminals excluding tankers or barges of less than 25,000 barrels capacity.

These figures as published by the institute would give the industry a complete picture each week of the current gasoline situation in the country and would be of paramount importance to the industry, the committee reports.

Their report will be presented by Mr. Boyd before the executive committee of the institute in the near future.

Another section of the committee's report suggests the advisability of making available, by states, actual consumption data on petroleum products. The most practicable method, it believes, to gather such figures is for the institute, or the Bureau of Mines, to gather reports monthly from refining companies of shipments by principal products by states.

Members of the statistical advisory committee which presented the report are as follows: Chairman, John D. Gill, Atlantic Refining Co., Philadelphia; Secretary, Fred Van Covern, American Petroleum Institute, New York; W. C. Allen, The Texas Co., New York; Oliver S. Ambrose, Tide Water Oil Co., New York; H. R. Armour, Pan-American Petroleum & Transport Co., New York; J. H. Brookmire, Shell Union Oil Co., New York; E. W. Isom, Sinclair Refining Co., New York; R. H. Johnson, Vacuum Oil Co., New York; A. J. McIntosh, Standard Oil Co. of New York; Joseph H. Pogue, petroleum economist, New York; Frank R. Reitzel, Sun Oil Co., Philadelphia; E. P. Salisbury, Standard Oil Co. of New Jersey, New York; J. M. Sands, Phillips Petroleum Co., Bartlesville, Okla.; Warren Sinsheimer, Henry L. Doherty & Co., New York; Earl M. Wagy, Standard Oil Co. of California, San Francisco.



Pipe still at Amarillo Producers & Refiners plant at Pyote. This single still runs from 2400 to 2800 barrels of crude a day

Seubert is A.P.I. Director

NEW YORK, April 25.—E. G. Seubert, president of the Standard Oil Co. of Indiana and its chief executive since the resignation of Col. R. W. Stewart, chairman of the board, was elected a director of the American Petroleum Institute at the directors' meeting April 24. He takes the place of L. V. Nicholas, formerly president of the Independent Oil Men of America, who recently resigned from the A.P.I. board.

Traffic on Michigan avenue, Chicago

Average Compression Ratio of 1929 Motors Rises to 5.07 to 1

DETROIT

By J. C. Chatfield
N. P. N. STAFF WRITER

A HALT in the increase of compression pressures in automotive power plants until there is a decided improvement in motor design or gasoline is seen as the present trend of that industry by automotive engineers.

While compression ratios of 1929 motors are higher than in 1928 the increase has been more moderate. It has been caused largely by some of the more conservative manufacturers bringing their motors up to the level of the leaders. General opinion is that the average compression ratio will stand a little above 5 to 1 until new developments appear.

The engineers also appear to have reached the conclusion that further increases in the speed of motors are not desirable, at least for the present. There is talk that the motor speed may level out at about 3000 revolutions per minute at maximum power output.

There appear to be two schools of thought among automotive engineers as to the best policy to follow in fixing the compression ratio of automobile motors. Some believe it to be best to sell a motor which will require a premium fuel to give knockless service under ordinary driving conditions.

There seems to be less tendency in this direction this year than before. Even though a given car may not operate to the best advantage on the ordinary grade of commercial gasoline, manufacturers are keeping quiet about the fact. It is said that one manufacturer who advertised that buyers should use an anti-knock product exclusively found the reaction to be unfavorable.

There are some manufacturers who take the position that they will never increase the compression ratio of their cars beyond the point where satisfactory operation can be had on the average gasoline.

Increases in compression ratios in the past few years have had the effect of creating a tremendous demand for premium anti-knock gasolines, whether the manufacturers have recommended the special fuels or not.

An indication of this demand for special motor fuels is seen in the record of business done by the Ethyl Gasoline Corp. in the last three years. Since gasoline blended with Ethyl fluid is the most widely sold anti-knock fuel, the manufacturers were asked by the writer to give a statement of their sales.

The company replied that in seven months of 1926 its customers sold 90,000,000 gallons of gasoline blended with Ethyl fluid. It will be remembered that sale of the product was suspended from May 1, 1925, to May 1, 1926, during an investigation of its effect on public health by the surgeon general.

Of course, selling did not get under way to a great extent in the first month. For that reason it may be assumed that the sale in 1926 was at the annual rate of about 180,000,000 gallons.

In 1927 the sale of gasoline blended with Ethyl fluid totaled 315,000,000

Compression Ratios of Principal American Passenger Cars for 1927, 1928 and 1929

Make and Model	1927 B. H. P.	1927 Comp. Ratio Stand.	1927 Comp. Ratio Op.	1928 B. H. P.	1928 Comp. Ratio Stand.	1928 Comp. Ratio Op.	1929 B. H. P.	1929 Comp. Ratio Stand.	1929 Comp. Ratio Op.
Auburn 6-80		5.00		60-3200	5.05		65-3400	5.16	6.25
Auburn 8-90	62-3200	5.00		88-3200	5.15		93-3300	5.15	6.25
Auburn 120	90-3200	5.00		115-3300			120-3300	5.25	6.56
Black Hawk L 6							85-3200	5.25	5.50
Black Hawk L 8							90-3200	5.50	6.00
Buick 116	63-2800	4.79		63-2800	4.79		74-2800	4.3	4.80
Buick 121	77-2800	4.31		77-2800	4.30		91-2800	4.3	4.80
Buick 129	77-2800	4.31		77-2800	4.30		91-2800	4.3	4.80
Cadillac	87-3000	4.75		90-3000	4.90	5.30	95-3000	5.3	4.8
Chandler 65	45-2600			45-2600	5.00		55-3000	5.0	
Chandler Big 6	55-2100			63-2300	5.00		83-2600	5.0	
Chandler 75	60-2600						80-3200	5.0	
Chandler 85	80-3000			80-3000	5.00		95-3000	5.0	
Chevrolet	26-2000	4.3		35-2200	4.50	5.1	46-2600	5.0	
Chrysler 65	54-3000	4.9			5.00	6.00	65-3200	5.2	6.0
Chrysler 75	70-3000	4.8		75-3200	5.00	5.80	75-3200	5.0	6.0
Chrysler 80	92-3000	4.8		112-3000	6.00	4.75	112-3400	6.0	5.0
Cunningham	90-2400	4.26					106-2400	5.0	
De Soto							55-3200	5.0	6.0
Dodge Bros. 6				40-2400	4.08		58-3000	5.18	5.54
Dodge Bros. Senior				60-2800	5.26		66-2800	5.55	
Duesenberg							265-4500	5.20	
Durant 4							36-2400	4.8	
Durant 50				40-2400	4.79		43-2800	4.79	
Durant 70				47-2800	5.40		52-2900	4.90	
Elcar 75		4.9					52-2900	4.9	
Elcar 95, 96	60-2900	4.9					70-2900	4.9	
Elcar 120	84-2900	4.9					84-2900	4.9	
Erskine	40-3200	5.0		40-3200	4.50		43-3000	4.87	5.30
Essex 6	4000*				5.20		55-3600	5.80	
Falcon	46-3000	4.6		45-3000	5.50				
Ford A	20-1600	3.6		40-2200	4.50		40-2200	4.22	
Franklin 130								4.57	
Franklin 135, 137		4.43		46-2500	4.40		48-2500	4.57	
Gardner 120	52-2500	4.5		65-3200	5.0		76-3200	5.05	
Gardner 125	62-3200	5.0		74-3200	5.0		86-3000	5.05	
Gardner 130	84-2900	5.0		115-3200	5.35		115-3300	5.25	
Gra. Paige 612							62-3200	5.57	
Gra. Paige 621							76-3200	5.51	
Gra. Paige 621							97-3200	5.35	
Gra. Paige 827							120-3200	5.54	
Gra. Paige 837							120-3200	5.54	
Hudson	95-3100				5.25		91-3200	6.00	
Hupmobile A					5.00			4.8	
Hupmobile M								5.05	
Jordan 6 RE	62-3000			62-3000	5.00		61-3000	5.05	
Jordan 8 JE	64-3000	4.65		80-3200	5.00		85-3200	5.05	
Kissel 73							52-2900	5.15	
Kissel 95							95-3200	5.35	
Kissel 126							126-3400	5.35	
La Salle				80-3000	4.80		86-3000	5.3	4.80
Lincoln	90-2800	4.81		90-2800	4.81		90-2800	4.81	
Locomobile 78									
Locomobile 88				90-3000	5.00		102-3000	5.3	
Marmon 68	64-3200	5.2			5.25		76-3200	5.25	
Marmon 78	84-2700	4.34		86-3400	5.50		86-3400	5.50	
Moon 6-72	47-2600	4.78		66-3150	4.94		66-3150	4.94	
Moon 8-80				85-3100	5.00		86-3200	5.00	
Nash Std. 6	40-2400	4.50		45-2600	4.50		50-2800	5.00	
Nash Spc. 6	52-2600	4.69		52-2600	4.69		65-2900	5.15	
Nash Adv. 6	69-2500	4.60		70-2400	4.60		78-2900	5.10	
Oakland A. A.-6	45-2600	4.8		60-2800	4.80		68-3000	4.90	
Oldsmobile		4.7			4.81		62-3000	5.20	
Packard 626	82-3200			82-3200	4.80		90-3200	4.65	
Packard 640	106-3200			106-3200	4.73		106-3200	4.38	
Peerless 6-61	52-3000				4.55		62-3000		
Peerless 6-81	63-2600			63-2600	4.55		66-2900	5.06	
Peerless 125	80-2800			80-2800	4.55		80-2800		
Pierce Arrow 125		4.35					125-3200	5.07	
Pierce Arrow 126	100-2600	4.35		100-2600			125-3200	5.07	
Plymouth							45-2800	4.60	
Pontiac 6-29	36-2400	4.60		37-2400	4.90		43-2600	4.90	
Roamer 8-80	84-2900	4.94						4.94	

gallons, an increase of 135,000,000 gallons or 75 per cent over the estimated annual rate of sale for 1926.

In 1928 the sale of Ethylized gasoline totaled approximately 550,000,000 gallons. This was an increase of 235,000,000 gallons or 74.6 per cent.

The company expects an increase in its business in 1929 of an additional 25 to 50 per cent. It has added a number of important distributors to its list of patrons recently including the Standard Oil Co. of California, and a number of Independent refiners doing business in the Standard Oil Co. of Indiana marketing territory which until March 1 was exclusive to that company under contract.

While figures are not at hand showing sales of other premium anti-knock fuels it should be assumed that their sale has increased likewise.

In considering the proportion of anti-knock gasolines sold to ordinary grades in the future it must be remembered that newer cars of high compression ratios are rapidly replacing older vehicles which are going to the junk heap.

Automotive Industries estimates that of the 3,220,000 cars sold in 1928, 2,213,000 cars were required to replace older models which were worn out.

As far as compression ratio figures are concerned automotive engineers are unanimous in the assertion that they do not altogether indicate knocking tendency.

One example was given of a car with a compression ratio of 4.2 to 1 which has as great a tendency to knock as another which has a compression ratio of 5.5 to 1.

IT IS apparent that the engineers have come to the conclusion that motor design has a great deal to do with knocking tendency as well as compression pressure or the fuel used. The design of the combustion chamber has been found to be important, for example.

One manufacturer has installed a dual ignition system on his motor to decrease the knocking tendency. With this system it is possible to ignite the fuel more quickly and uniformly than with a single spark plug. As a result it has been found possible to adjust the spark to fire nearer to dead center and thus obtain greater power for a given compression ratio.

The point at which the spark is released is another factor with a bearing on detonation. One theory is that the nearer the spark can be released to the center of the mixture the more evenly the charge burns. Experiments of interest have been made

with spark plugs equipped with long extensions to the points.

Discussing the value of increases in compression ratios, Dr. G. G. Brown of the University of Michigan, reported some time ago that there is not a straight line relationship between compression ratios and power increases from a given quantity of fuel. Between 4 to 1 and 5 to 1 he found a big increase in power output and nearly as large an increase between 5 to 1 and 6 to 1.

Above that point he found the benefits less pronounced. Between 5 to 1 and 6 to 1 Dr. Brown found motor efficiency to increase about 6 per cent.

The trend in compression ratios of passenger cars is shown in detail in an accompanying table. The table was prepared by the Ethyl Gasoline Corp. from information given in the automobile trade papers and from measurements made in its own laboratories. Figures are given for most models for 1927, 1928 and 1929.

Compression Ratios — *Continued from Page 40-h*

Make and Model	1927 B. H. P.	1927 Comp. Ratio Stand.	1927 Comp. Ratio Op.	1928 B. H. P.	1928 Comp. Ratio Stand.	1928 Comp. Ratio Op.	1929 B. H. P.	1929 Comp. Ratio Stand.	1929 Comp. Ratio Op.
Rolls Royce Si Gh....	80-2000	4.00							
Stearns Knt. 6-80.....							70-3200	5.00	
Stearns Knt. 8-90.....	100-2600	4.50		112-2800	5.00		120-2800	5.00	
Studebaker Dict.....	50-2200	4.50		50-2200	4.50		67-2800	4.50	5.50
Studebaker Com. 6....	65-2400	4.25		75-2400	4.25		74-3000	4.95	5.50
Studebaker Com. 8....							80-3600	5.05	5.50
Studebaker Pres.....				100-2600	4.70		114-3200	5.00	5.50
Stutz M.....	92-3200	5.00		115-3600	5.00	5.50 6.00	115-3600	5.25	5.50
Whippet 96 A.....				32-2800	5.00			5.05	
Whippet 98 A.....	40-2800							5.14	
Willys-Knt. Std.....				45-3000	5.50		45-3000	5.50	
Willys-Knt. Grt.....	65-3200			70-3200	5.00		70-3200	5.00	
Willys-Knt. 70 B.....	52-3100			53-3000	5.50		53-3000	5.50	

THE average compression ratio of cars listed in 1927 was 4.65 to 1. The highest compression ratio that year was that of the Marmon 68 with 5.2 to 1. Only six models made by four manufacturers had a ratio of 5 to 1.

The average compression ratio of cars listed in the table for 1928 was 4.90 to 1, a jump of 25 points. In that year four models by three manufacturers had standard motors with a compression ratio of 5.5 to 1. Two manufacturers offered optional heads for their motors with compression ratios of 6 to 1 and one manufacturer had a 6 to 1 ratio on a standard motor. There were 29 different models with a compression ratio of 5 to 1 or higher as compared with eight models in 1927.

The lowest compression ratio shown on the list in 1928 was a Dodge Bros. model at 4.08 to 1. Ford was up to 4.5 to 1 from 3.6 the previous year.

The increase in compression ratios for 1929 models over 1928 models has been smaller than between 1928 and 1927 models. The average of the 81 models given in the table is 5.07 to 1, an increase of 17 points over the average of 4.90 to 1 in 1928.

The 1929 model Ford has dropped back to a compression ratio of 4.22 to 1 and again is the lowest of the models listed. The next higher is the Buick with 4.3 to 1.

Two manufacturers, Hudson and Chrysler, each offer a model with a standard motor having a ratio of 6 to 1. The Auburn is offered with an optional head, one model with an optional ratio of 6.56 to 1. Two models may be had with a compression ratio of 6.25 to 1.

Of the 81 models listed in the table 57 have compression ratios on standard models of 5 to 1 and higher as compared with 29 out of 56 in 1928 and eight out of 41 in 1927.

Compression ratios of 1929 models in the United States are not much different from those reported for current models of European cars. The annual statistical number of *Automotive Industries* lists the compression ratio of 71 British cars. The average of these is 5.2 to 1. The same issue lists 132 French cars with an average compression ratio of 5.03 to 1. The French ratio is thus lower than the U. S. on standard models.

FLASHY performance in heavy traffic and sustained high speed on country roads still are important features in competitive automobile selling. But the stability of the motors sold is beginning to be inquired about rather insistently by some buyers.

Seven years in the past has been considered the average life of a motor car, from salesroom to the junk heap. But lately it has been found more difficult to keep motors together that long. Part of this is due to the fact that drivers are using their cars more and part is due to high speed operation.

Whatever the cause, the fact remains that new cylinder blocks have been required on many cars at around 40,000 miles. New pistons and rings are being installed more frequently and bearings seem to loosen too often for the enjoyment of the car owner.

It is evident that the faster a motor turns over as compared with the speed of the car, the more wear will be caused on cylinder walls, pistons and other bearings ahead of the gears.

"If flashy performance is to be demanded by the motorist, he is going to have to pay for it in one way or another," one engineer told the writer.

"Either he will have to buy a car which has had more resistance built into the metal or he will have to be content with a shorter lived motor.

"Price is a big element in automobile competition today," he continued. "Margins are narrow. To build motors with more resistance to wear it would be necessary to add considerably to the price of each vehicle."

An over-riding gear to permit faster travel on country driving at a slower motor speed is looked on by one observer as a cure which might be applied. He pointed out that an outside manufacturer is making such a gear which may be added to standard makes of automobiles and is meeting with some success in their sale. One motor car manufacturer now has a four-speed transmission.

With higher gear ratios power is not as great, of course. The motorist who uses such gears must expect more shifting on steep hills to compensate for the longer life he obtains from his motor through fewer revolutions per minute.

An accompanying table prepared by the Ethyl Gasoline Corp. from trade journal data and its own investigations gives the brake horsepower developed by various cars at specified R.P.M. for the past three years. The table shows clearly the tendency in the past to increase motor speeds.

THE 51 models for which the information is given for 1927 models had an average of 2792 revolutions per minute at maximum power output. The same number of 1928 models had an average of 2857 R.P.M.

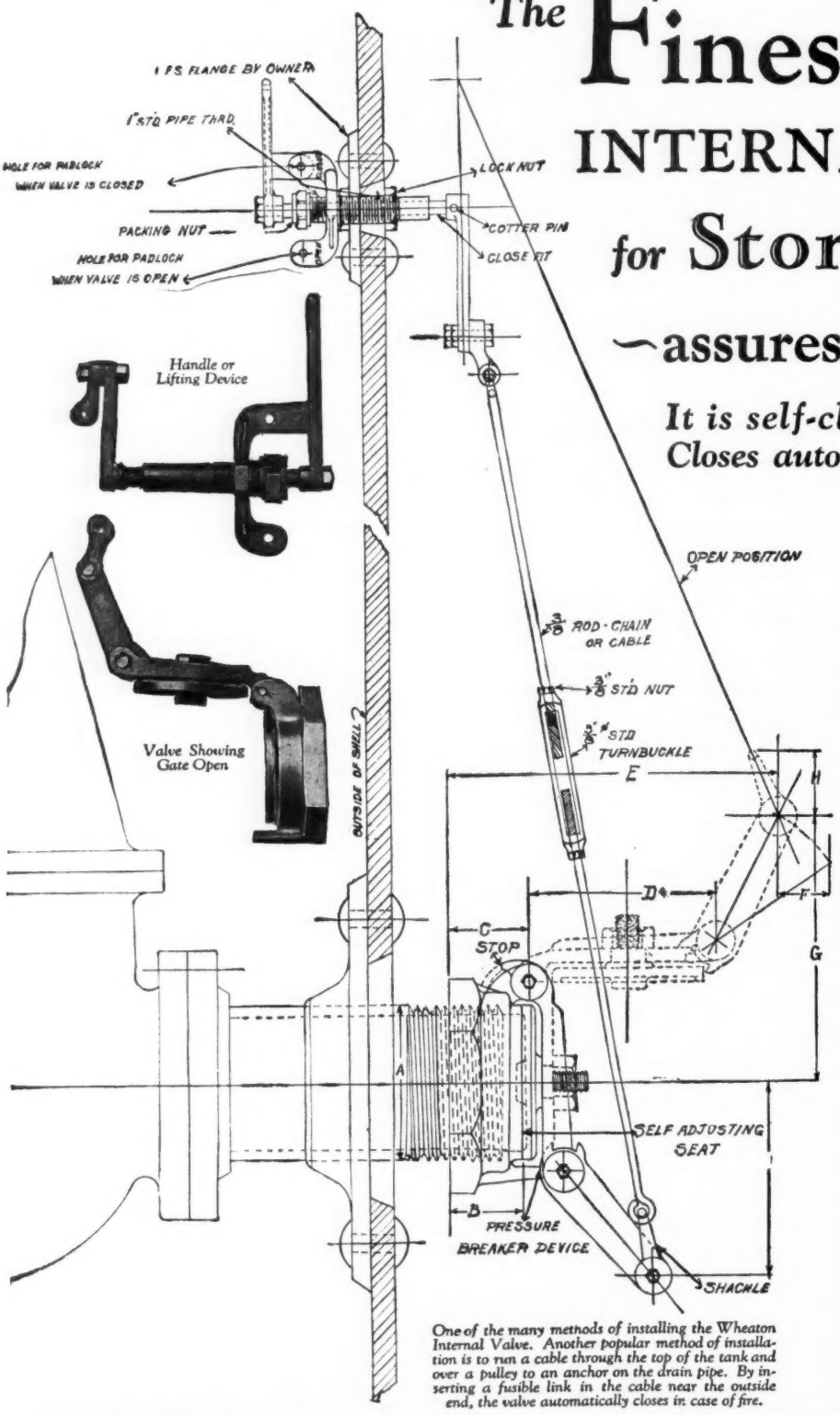
The 77 models listed for 1929 have an average of 3052 R.P.M. at maximum brake horsepower. The highest R.P.M. listed is that of the Duesenberg with 265 horsepower at 4500. The next highest is 3600 R.P.M. reported for three autos. The lowest is the Ford at 2200. Above the Ford comes the Cunningham at 2400 and the Franklin at 2500.

The list of 1927 models shows the highest R.P.M. to be 3200 and the lowest Ford with 1600. A majority were about 2800.

The Finest of All INTERNAL VALVES for Storage Tanks

—assures utmost safety

It is self-closing and leak-proof
Closes automatically in case of fire.



One of the many methods of installing the Wheaton Internal Valve. Another popular method of installation is to run a cable through the top of the tank and over a pulley to an anchor on the drain pipe. By inserting a fusible link in the cable near the outside end, the valve automatically closes in case of fire.

THIS Wheaton Internal Valve represents the most advanced development in safety valve design and manufacture. It is absolutely dependable.

As is obvious from the accompanying illustrations, the flow of the liquid closes the valve gate when released; and the perfectly true smooth surface of the rim of the gate, closing against the equally true smooth surface of the flange of the body, makes a leak-proof seal. In opening the valve the seal is "broken" by the cam-like pressure breaker—no sticking, no stress, no strain, no friction.

The drawing at the left shows one of the many methods of installation. The Wheaton Internal Valve can be used on any tank of any height, and in any position or angle desired—vertically, horizontally or obliquely. And the handle device can be located at any height on the wall of the tank or on the top.

By use of a fusible link fitting, the Valve closes automatically in case of fire near the tank. This gives further protection for users of Wheaton Internal Valves.

Protect your stocks from wastage and dangers due to carelessness and imperfect devices. Use Wheaton Internal Valves—they are Wheaton *quality* in every respect. Sizes: 2", 2½", 3", 4", 6", 8" and 10". Order a sample for your own test—returnable for credit or refund.

A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd., London, Ont. Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

The Editors' Viewpoint

National Petroleum News

Broadcasting Again, The A.A.A., We Mean

WE ARE indebted to the American Automobile Association for the information that there were 77 different prices for gasoline in this country Feb. 19 of this year.

We don't know just what economic value this information is to the world at large.

Last year the A. A. A. told us, through its so-called news service, that there were 47 different prices for motor fuel prevailing in this country. Carrying the comparison a bit further, in an effort to find some useful information in these figures, we find that a year ago 800 club members reported the 47 different prices and this year 1065 clubs reported the 77 different prices. So there's no common basis from which to work to determine if the amount of variance in gasoline prices is increasing, or not, and what the reason might be.

The A. A. A. itself issued several hundred words of publicity material commenting on the fact there are 77 different gasoline prices over the country, and still we are constrained, after reading this carefully, to ask, "What of it?"

While we are not the best hand in the world at digging up statistics, we'll be willing to bet a new straw hat with the A. A. A. that we can go out and find beefsteaks, potatoes, clothing, building materials, automobiles, and garage work on your car (in which the A. A. A. might well be interested) showing just as great a variance over the country in cost to the consumer.

With the varieties of grades of motor fuel that are now offered the public, the varieties of places where it can be bought, the degree of competition in retailing gasoline there has been the last few years, to say nothing of the factor of freight rates, it is no wonder there are at least 77 different prices for gasoline.

The A. A. A. tries to make something of the fact that retail gasoline prices along the Atlantic Seaboard are about on the same level as at inland points. It infers, showing a woeful ignorance of developments in the oil industry the last few years, that prices at seaboard, because of the distance from oil fields should be higher than at inland points nearer the fields. It should have known that the development of tanker transportation of gasoline, with its low per gallon cost, has almost put the seaboard at the dooryards of refineries along the Gulf and even in Mexico and Venezuela.

In fact, the growth of new refining districts in this country and the resulting competition for gasoline business in consuming centers, along with greater water transportation, has pretty much upset the old scale of retail prices based on the freight rate from Group Three. And the public has had the advantage in a lower price for its motor fuel.—V. B. G.

Is This an Example Of Navy Efficiency?

CONFUSION in the oil industry as to furnishing motor fuels and lubricants to the departments of the federal government is likely to result from the publication by the navy department of "Appendix VI, lubricants and Liquid Fuels, General Specifications for Inspection of Materials."

Duplication of effort, waste of taxpayers' money and unfairness are outstanding features of the publication.

It is duplication of effort because it sets forth recognized tests and testing methods already developed and standardized through the careful work of Committee D-2 on Petroleum Products and Lubricants of the American Society for Testing Materials.

It seems a waste of taxpayers' money to print a book of 104 pages to contain material already available in book form both in the report of Committee D-2 and in Technical Paper 323B of the Bureau of Mines, which is supposed to contain the specifications of petroleum products for government purchase, as well as tests to be applied to those products and methods of applying them.

It is unfair because in many cases the A. S. T. M. testing methods have been republished without the change of a syllable and no credit whatever has been given to Committee D-2.

Confusion in the oil industry is to be expected because in some cases the wording of the tests and testing methods is changed enough, without changing the substance of the text, to mislead refinery laboratory workers who might not study the text closely or who might not be thoroughly familiar with the A. S. T. M. testing methods.

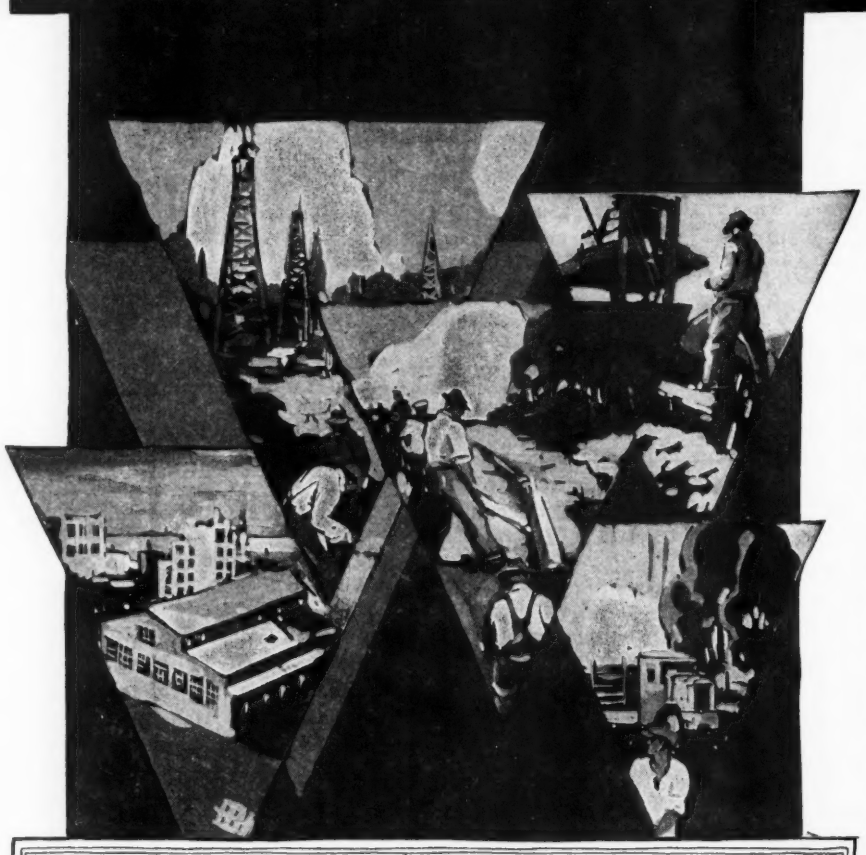
Oil technologists and sales engineers who were present at the meeting in Washington March 15 to discuss proposed changes in gasoline specifications, heard representatives of the government lay stress on the fact that the Bureau of the Budget requires purchase of oil and gasoline on strict specifications and is very reluctant to allow any deviation from these specifications.

They also were familiar with the work that was done by the department of commerce under guidance of Mr. Hoover in the direction of simplifying industrial and commercial practice to minimize duplication of effort and cut out needless expense.

They wonder how the navy department came to publish Appendix VI.

The Federal Specifications Board intends the specifications it sets for goods bought by the government to become general trade standards, it was officially announced. If so, oil technologists ask, why fog up the accepted methods of testing products to determine whether or not they meet the specifications?—P. T.

FROM WELL TO METER



The Hope Engineering Company is the only organization in the industry which assumes entire responsibility for a gas pipe line, FROM WELL TO METER.

One contract—one responsibility—covering every detail of a construction operation, FROM WELL TO METER.

One all-sufficient organization, with ever-ready equipment for a job of any size whatever, prepared at a moment's notice to handle any problem in natural gas transmission and distribution, FROM WELL TO METER.

No divided responsibilities—no sub-contracts—no delays or misunderstandings—no arguments — but a disciplined construction staff accustomed to success and concerned only in doing the job on time and right, FROM WELL TO METER.

Put your pipe line problems up to the firm that has successfully handled the most notable pipe line achievements in the past 22 years.

HOPE

DESIGNERS
ENGINEERS
CONTRACTORS

HOPE
ENGINEERING
COMPANY
MOUNT VERNON, OHIO, U.S.A.

ORGANIZATION
CONSTRUCTION
MANAGEMENT

The campaign in the Mid-Continent for an oil tariff is widening. With a substantial number of independent operators joining forces with the Mid-Continent Royalty Owners Association to subscribe funds for the conduct of the fight, it appears that a vigorous showing will be made before the present session of Congress.

Charles J. Wrightsman, head of the producing company which bears his name, is general chairman of the combined forces. E. B. Howard, who retired as representative from the First district of Oklahoma March 4, has been retained by the tariff campaigners to lead the battle in Washington and has already gone there to make a start.

Mr. Howard, who recently announced his candidacy for the U. S. Senate, subject to the democratic primaries, in 1930, introduced a bill some time before he left the house. This provided for a duty of one dollar a barrel on crude oil. As yet, no import duty on refined products has been mentioned. The Howard bill was never reported out of committee.

Mr. Wrightsman last week appointed two committees, one for Tulsa and one for Oklahoma City. The Tulsa group consists of Homer T. Lamb, Red Bank Oil Co.; E. B. Lawson, individual operator; Charles L. McMahon, individual operator; Clyde Pape, Selby Oil & Gas Co.; W. L. Kistler, of the Kistler Petroleum Co. and T. F. Birmingham, Margay Oil Co. For Oklahoma City, Mr. Wrightsman named W. R. Ramsey, of the Ramsey Petroleum Corp.; Wirt Franklin, of the Wirt Franklin Petroleum Corp.; L. H. Wentz, of the Wentz Oil Corp. and C. F. Urschel, of the T. B. Slick interests.

Much data are being prepared for the consideration of Congress. Of course, brisk opposition will be supplied by the oil companies who are interested in foreign fields. The subject is an old one and has bobbed up in every period of low prices for crude oil, only to die to a murmur when conditions improved.

Tariff proponents say that the conservation program which has been before the industry for the past few years is accomplishing nothing. They say the tariff is the only method of abolishing the difference in producing costs between foreign and domestic crudes. In its resolution favoring the import duty, the royalty people said they were being "cooperated out of the business."

What with the efforts of the Federal Oil Conservation Board to promote an "interstate compact" for limitation of production, the rumblings and mutterings of Senator Wheeler, who last week said the large companies were "profiteering" and who is likely to demand another of those dismal investigations and this fight for a tariff—with all these the summer promises to be a brisk one.

* * *

New construction items for Tulsa include three more stories atop the Skelly Oil Co. building, making ten and five floors for the Mid-Continent building, raising it to 15. The Transcontinental Oil Co. will occupy all five stories of the Mid-Continent, whose name is to be changed to the Thompson building.

New elevators will be installed in the Skelly building. In a way, that will sadden many who visit this company regularly. There is now one elevator, operated by a pleasant-faced lady, who is a fine bureau of information. It is not necessary to ride up in her elevator to find out whether Bill Skelly or any of the other dozens of people is in the building. This operator knows all of them and remembers whether they are in or out. She saves many a useless call.

* * *

Note to Umpire Ray M. Collins, Tulsa: As you suggested, this writer will stop in Bradford to see whether some conservation work, such as proration, restriction of drilling and umpiring can be started in the flush Pennsylvania fields.

* * *

Ben Allen Ames, of Oklahoma City, is associated with his father, Judge C. B. Ames, a director of The Texas Co. and in general charge of the company's legal work. The junior Ames is of the legal staff of the company. He is a cousin of Ben Ames Williams, well known novelist

Ten Years Ago

(From National Petroleum News, April 30, 1919)

Roy B. Jones, Frank Brown, C. H. Clark and John O'Donohoe pay $220,000 for 22 acres adjoining the Burk-Waggoner well that opened the Northwest Extension to Burkburnett.

President C. A. Ulsh announces Paragon Refining Co., Toledo, expanding capacity to 10,000 barrels daily.

C. G. Sheffield made manager of fuel oil department, newly created, of Standard Oil Co. of New Jersey.

Pat Malloy elected president of Western Petroleum Refiners Association.

Branch of Mid-Continent Oil & Gas Association formed at Wichita Falls.

Crude oil storage shortage in Pine Island field, Louisiana.

Bigheart Producing & Refining Co. announces expansion of plant at Bigheart (now Barnsdall) to 2,500 barrels daily capacity. The plant was J. S. Cosden's starting point in refining. John L. Gray president of the Bigheart company (in 1919—he is now vice-president of the Shaffer).

"NATIONAL" seamless steel couplings

Another link in the chain of "NATIONAL" Service—a complete line of couplings for all your requirements. Thus, it is possible for you to retain the same high quality in your reconditioned material that you have in an original string of "NATIONAL" A.P.I. Drill Pipe, Casing, Tubing and in your Line Pipe. These couplings are made in every way to match the satisfactory performance of all "NATIONAL" Oil Country Tubular Goods.

Especially designed to insure correct alignment of joints; to meet the most exacting thread standards; to resist galling; to make a good, tight joint; to maintain interchangeability; to resist deformation in supporting long strings; to minimize abrasive action on threads in breaking up joints, and to raise joint making practice to a new and higher standard.

Your local Supply House carries them in stock for prompt shipment. For further information, ask for Booklet—"NATIONAL" Seamless Steel Couplings.

NATIONAL TUBE COMPANY • Pittsburgh, Pa.

***Subsidiary of* United States Steel Corporation**

Active Drilling Started Near New Pottawatomie County Wells

By John Power
N. P. N. STAFF WRITER

TULSA, April 27

DELAYS occasioned by one thing or another prevented the full value of some of the wildcat completions of the preceding week being learned during the week just passed. However, two of the more important discoveries have started localized drilling campaigns, while other wells which are shut down may be expected to show their worth before long.

Pottawatomie county, Oklahoma, which lies immediately west of Seminole county, contains the state's two newest "hot spots."

The area around the Simms Oil Co. Viola lime strike in the SE NE NE of 19-6-4, is getting a play started in rapid fashion. A total of 14 locations have been made in the area within three quarters of a mile of the well, which is making better than 3000 barrels a day from the Viola lime topped at 3640, and penetrated to 3699. By far the biggest portion of the production is coming from the formation between 3688 and 3698 feet, the latter figure being the present total depth.

Several leases in close proximity to the well are slated to expire within the next 90 days, so that a lot of activity is to be expected.

"Pot" county's other new well is a Hunton lime producer which may reasonably be expected to open a Hunton lime pool in the area surrounding it. The well, which is in the SE NE NE of 2-7-4, is doing a grand job of producing, making 135 barrels an hour from the lime topped at 3750 feet, and drilled to 3777.

Eight locations have been made and are now active in close proximity to the discovery. The well is difficult to name, nearly everybody and his brother having an interest of some kind. Among the owners are Martin and Irwin, the McGraw Oil Co., Sinclair Oil & Gas Co., and the Shaffer Oil & Refining Co.

Although called by some an extension to the St. Louis pool, which lies some three miles to the south, the producing formations are entirely different, the new well being in the Hunton, as stated, and the St. Louis pool being in the second Wilcox sand. There is, of course, a few thousand barrels daily of Hunton lime production on the outskirts of the St. Louis pool, but the production which made St. Louis famous is coming from the Wilcox.

Out in Logan county, the Shell Petroleum Corp. extended its Lovell pool one location to the west by completing the Shell No. 3 Rouse "B," SE NE SE of 19-19N-4W, for 100 barrels an hour in the Wilcox sand. The well, which produced 2182 barrels the last 24 hours of its first 36 hours of existence, topped the sand at 6081. At 6084 the well was making about 10 barrels an hour, increasing to 100 barrels an hour when deepened to the present total depth of 6087 feet.

Due to the fact that one company, the Shell Petroleum Corp., practically controls the cream of the acreage, and perhaps due in part to the great depth at which the production is found, there is comparatively little activity in the pool. Certainly nothing like the drilling campaign which is under way in the Oklahoma City area in search of production equally deep, is contemplated in Logan County. The field now has 37 producing wells, making a total of 13,300 barrels daily.

The discovery well of the Oklahoma City pool is continuing to hold its production around 3300 barrels daily, with some 285 barrels of water produced with the oil. The well still has the oil producing horizon to itself, none of the drilling wells in the field having reached the deep pay. One or two are getting pretty deep, though, and inside of the next 30 days it is likely that the No. 1 well of the field will have some competition of sorts.

INTERNAL activities in the Seminole district are confined principally to the Gilcrease-Cromwell sand play at the south edge of the little River pool. There is a fairish amount of activity in the vicinity of the community tract being developed by the Carter Oil Co. and others in 10-9-6.

The Gilcrease sand produced a nice gas well during the week in the Independent Oil & Gas Co.-Mid-Kansas Oil & Gas Co. No. 1 Little, SW NW NE of 26-7-6. This well topped the Gilcrease at 3146, drilled out of it at 3170, and at a total depth of 3173 was shut in as a gas well estimated capable of producing between 45 and 50 million cubic feet of gas per day.

The Carter's community test, carried as the Carter No. 1 C. Stewart, NE SE of 10-9-6, is considered a freak well by many. Initial production from the Hunton lime was 4175 barrels the first 24 hours. The Hunton lime which is doing the producing was encountered at 3991, with the present total depth at 4069. Adjacent wells are drilling below the lime, having been dry in that formation. The play was started for a Wilcox test, the other drilling wells being on their way down to that formation.

KANSAS registered little change in its situation, the building of pipe line and storage facilities delaying the further completion of wildcat showings reported last week. The Valley Center pool now contains 52 wells, making a total daily production of 26,263 barrels.

It frequently happens that the discoverers of a new pool find themselves holding edge leases, with other operators owning the biggest part of the productive acreage. In the Valley Center instance however, the reverse is true. The Gypsy-Marland-Bu-Vi-Bar interests, whose No. 1 Wright opened the pool, are producing more than 57 per cent of the pool's production, from less than half the pool's wells. Under present conditions, what appears as perhaps the best part of the acreage has not, yet been drilled, and of this these interests own by far the biggest portion.

The Marland Production Co. No. 2 Goodrich, NW NE SW of 16-25S-1E, north offset to the Goodrich chat discovery, is now a light well in the chat, encountered from 3004 to 3036. After a light shot the well is swabbing about 500 barrels per day. The same company's No. 1 Westerfield, two locations south of the No. 2 Goodrich, which was a hole full of water in the chat on top of the Mississippi lime, is cleaning out and swabbing 168 barrels daily from the Simpson, in which, as told in NATIONAL PETROLEUM NEWS last week, the well completed as a producer.

Notes on the Week

The original Seminole pool, in Twp. 9N-6E, is going to have the Gilcrease-

Cromwell combination tested. This is the formation which has been providing some excellent wells, both oil and gas, in the south edge of the Little River pool. Sinclair Oil & Gas Co. is going to drill its No. 5 Cudjo, twin well to No. 1, to the Gilcrease expected about 3200 feet. The test is in the NW of NW of 35-9-6.

* * *

Production in the Seminole area will be wide open for the 24 hours starting seven A.M. April 30. Reason, potential taking; the potentials arrived at during this period will be in effect during the fifth proration period, from May 1 to May 15.

* * *

Another Tonkawa sand gasser has been added to the list at Oklahoma City. The Wirt Franklin No. 1 Lowry, CWL NW 12-11N-3W, having blown in through 500 feet of mud for an estimated 40 million cubic feet of gas per day.

* * *

The Cromwell sand has bobbed up as a possible producing horizon in Hughes county, Okla. Independent Oil & Gas Co.-Mid-Kansas Oil & Gas Co. No. 1 McGirt, SE of 31-9-9, cored 11 feet of sand from 3542. After setting 8¼-inch casing at 3545, and drilling the plug, the well started flowing at the rate of 150 barrels per day, making at the same time some four and one-half million cubic feet of gas. The well is shut in awaiting tankage and pipe line facilities.

* * *

Hughes Co. Well is Gusher

By Telegraph

TULSA, April 29.—A 5000-barrel well in the 5-7N-7E area of western Hughes county has revived interest in a spot which had supposedly been proved barren of important production. The well, the Mid-Continent Petroleum Corp.'s No. 4 Smith, in the SW NW NE of the section topped the Wilcox at 4223 with an initial production of 240 barrels hourly from a total depth of 4234.

The new producer is the most southeasterly of the four producers on the lease, which now have a combined production of about 8900 barrels daily. Wells on adjoining properties which have offset the other producers have been disappointing in the extreme, although the new well indicates that some territory southeast of the present production may be in the money. A couple of dry holes have been drilled in the south half of Sec. 4, adjoining the present productive region on the east.

Stockholders Inspect Louisiana Holdings

NEW YORK, April 27.—A party of directors and stockholders of the Louisiana Land & Exploration Co. left New York April 26 for a tour of the company's holdings in Louisiana. The first stop was to be Shreveport, where the party was to be shown over the Monroe gas field.

They were then to proceed to the coastal region, where The Texas Co. is drilling several tests on the Louisiana company's holdings under contract made last November, covering about a million acres on which 10 salt domes had been found by geophysical methods. Nine of these domes are owned entirely, either in fee or by leasehold. The company also has about one and a quarter million acres now being explored by geophysical methods.

The party consisted of the following: Allen A. Aitken of Aitken & Co., Bankers, Montreal; S. G. Averell, Engineer, New York; E. J. Adams, Secretary to Mr. Tracy; Stanley W. Burke of Messrs. Reynolds, Fish & Co., New York; E. DeGolyer of Amerada Corporation, New York; F. W. DeWolf of Louisiana Land & Exploration Co.; Frederic Dominice of Union Financiere de Geneve, Geneva, Switzerland; Murray M. Doan of Tulsa National Bank, Tulsa; Andre Fatio, Secretary to Mr. Frederic Dominice; William V. Griffin, Nicholas Brady Estate, New York; Rene Hentsch of Messrs. Hentsch & Co., Geneva, Switzerland; Dean Mathey of Messrs. Dillon, Read & Co., New York; Gordon Mather of Mather Spring Co., Toledo; C. N. Mason of Electrical Securities Corporation; Elton Parks of Messrs. Dominick & Dominick, New York; Paul Paine, Petroleum Engineer, Beverley Hills, California; Holland S. Reavis, New York; Horatio W. Turner of Messrs. Kelley Converse & Co., New York; H. H. Timken of The Timken Roller Bearing Co., Detroit; Ernest B. Tracy of President Louisiana Land & Exploration Co., New York; Robert M. Youngs of Messrs. A. Iselin & Co., New York; W. W. Colpitts of Messrs. Coverdale & Colpitts, New York; Carl E. Anderson of Messrs. Coverdale & Colpitts, New York; J. J. Higginson of Messrs. Winslow, Lanier, New York; John Nickerson of Messrs. John Nickerson & Co., New York; James L. Mitchell of Merchants National Bank, St. Paul; J. A. Beattie of Dillon, Read & Co., Pittsburgh; Wm. Reid of Dillon, Read & Co., Boston.

Seminole Output Little Above Allowance

Tulsa-Greater Seminole's actual average production per day during the first half of April was 355,545 barrels, or 127,568 barrels under the daily potential of the district. In spite of this amount of oil kept under ground by the proration agreement in force, six of the districts nine pools overstepped their allotment to the extent that a total of 7262 barrels above the total allowed the district for the 15-day period was produced.

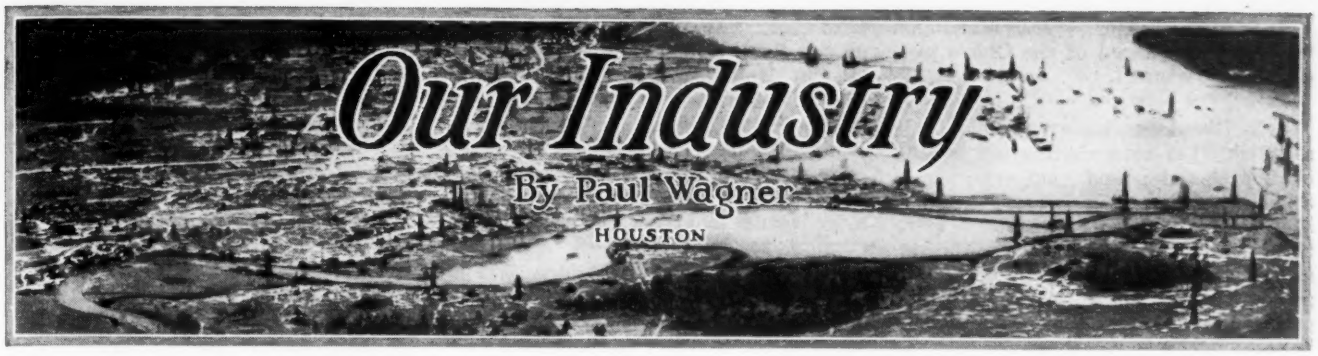
The worst offender among the fields producing more than their alloted share was Little River, which made a total of 26,060 barrels above the allowed production during the proration period. Only the fact that the St. Louis pool produced 23,907 barrels less than its allowed amount kept down the district's total amount of overproduction.

Twenty-four drilling wells reached the sand during the proration period, the fourth under the present agreement. They were shut down for eight days after reaching the sand as the drilling well's share in curtailing production.

The following table gives the pools of the Greater Seminole district, their daily potential production, their 15 days' total production and their actual 15 days' total production for the first half of April.

Comparison of Seminole Potential Production with actual and allowed production during first half of April.

Pool	Daily Potential	15 days total Allowed Production	15 days total Actual Production
Carr City	15,060 barrels	155,872 barrels	156,660 barrels
Mission	38,611 "	399,621 "	401,707 "
Earlsboro	78,478 "	882,262 "	882,262 "
Searight	10,999 "	123,741 "	123,436 "
Bowlegs	45,164 "	508,100 "	508,598 "
Maud	21,262 "	220,051 "	222,055 "
Seminole	43,827 "	493,055 "	493,717 "
Little River	90,763 "	1,021,093 "	1,047,153 "
St. Louis	138,949 "	1,521,495 "	1,497,588 "
	483,113 barrels	5,325,914 barrels	5,333,176 barrels



THE identifying word "Gulf," which is used in the corporate names of virtually all the oil companies belonging to the Mellon group of Pittsburgh, has now appeared in California. Pacific Eastern Production Co., California subsidiary of the parent Gulf Oil Corp. of Pennsylvania, hereafter will be known as the Western Gulf Oil Co.

Now there is only one Gulf Oil Corp. subsidiary of general importance which fails to carry the world "Gulf" somewhere in its corporate name. That is the Gypsy Oil Co., operating principally in Oklahoma and Kansas and to a lesser extent in Rocky Mountain territory.

Walter B. Pyron, vice president of the Western Gulf, has expanded the Los Angeles organization since moving to the Pacific coast from Houston about the first of the year. He has retained in it, however, the pioneers of the Gulf's California organization.

Hoyt S. Gale, long identified with the United States Geological Survey, before taking charge of the Gulf's preliminary work in California, is chief geologist; Art E. Wallace handles development. A complete organization for exploratory work and future drilling is maintained at the western offices in the Subway Terminal building, Los Angeles.

The Western Gulf has about 5000 barrels possible daily production shut in at Fruitvale, near Bakersfield, in the Kern County area of the San Joaquin Valley, its first Pacific Coast find.

* * *

R. D. Matthews, vice president of the Union Oil Co. of California, in charge of its manufacturing division, returned to Los Angeles the middle of April after a month in the east. While away from headquarters he attended conferences at Houston and New York dealing with export association movements of petroleum products.

* * *

J. K. Sterling is now connected with The Texas Co. of California at Los Angeles, in charge of legal work in the land and leasing department. He was formerly assistant secretary and attorney for the Marland Oil Co. of California.

* * *

Carl H. Beal, formerly a vice president of Marland Oil Co. of California, is now touring Europe, accompanied by Mrs. Beal. When at home in Los Angeles he engages in consulting geological practice. Mr. Beal is also interested in properties in the Kettleman Hills area of the San Joaquin Valley region.

* * *

"Brick" Elliott, head of the core-drilling company that bears his name, was christened John Elbert when he was born at Bozeman, Montana, May 31, 1887. He is so generally known by the cognomen applied by his friends, however, that only the closest of them know who is meant when he is identified with formality.

"Brick's" business is either deep in the ground or high in the air. He is a successful producer from deep wells in the Los Angles Basin fields and his core-drilling business also means "grabbing 'em" from horizons far below the surface.

J. E. (Brick) Elliott

When he is in a hurry to get anywhere he uses his personal airplane for the trip. Elliott flew from Los Angles to Fort Worth recently for the annual meeting of the American Association of Petroleum Geologists, of which he was the retiring first vice president.

Before engaging in business for himself, Elliott was successfully identified with Associated Oil Co., Caribbean Petroleum Co., and Shell Co. of California. He is a member of the University Club, Los Angeles, and the Engineers Club, San Francisco. He is also a member of the American Institute of Mining & Metallurgical Engineers.

* * *

Lawrence E. Porter has been appointed chief geologist of the Richfield Oil Co., Los Angeles, taking up duties formerly administered by W. E. (Steve) Dunlap, recently elected a director in charge of production activities. Mr. Dunlap had previously held the dual position of assistant production manager and chief geologist.

Mr. Porter, a Stafford graduate of the year 1921, worked in the Rocky Mountain territory after leaving school. In 1923, he was employed in the city engineer's office at Long Beach and in 1924 became identified with the Marland Oil Co. of California.

Leaving the Marland organization in 1925, he became resident geologist of the Richfield in the Fellows district. Later, he was transferred to the Los Angeles office as valuation engineer, becoming assistant chief geologist in 1928.

* * *

R. G. (Dick) Reese, formerly of the Associated Oil Co. staff, is now connected with the geological organization of the Standard Oil Co. of California.

* * *

John McFadyen, who makes headquarters at Casper but may be found most anywhere the Ohio Oil Co. has drilling or production activities, spent a week in Los Angeles about

the middle of April. Mr. McFadyen is in general charge of the Ohio's producing department.

* * *

R. R. Templeton, known to his friends as "Rick," has been visiting old friends in Los Angeles and conferring with Shell Oil Co. (California) officials. Mr. Templeton was at one time identified with Union Oil Co. of California, resigning an important post in its geological department to become chief petroleum technologist of the Royal Dutch-Shell group companies at the Hague, Holland. Since then he has been a world traveler.

* * *

James H. Jenkins, production manager of Associated Oil Co., returned to San Francisco headquarters the middle of April after a New York trip. On his way east for a conference with officials of the parent Tidewater Associated Oil Co., he visited in Fort Worth, where he was vice president and general manager of Tidal Oil Co. of Texas until Jan. 1, last.

* * *

Early Deane, drilling contractor of Ranger and Smackover days, continues to make his home in Hollywood. He is always glad to see the "old gang" from Texas and the Mid-Continent, extending the usual glad hand when they appear in California.

* * *

P. S. Haury, petroleum engineer of the Simms Oil Co., Dallas, who makes personal headquarters at Midland, Texas, was long identified with oil and mining operations in California.

He is a native of Summerfield, Illinois, where he was born July 23, 1880. After attending Pomona College in 1903-1904 he went to the University of California, at Berkeley from 1905-1907, graduating there. From 1910-1916, Mr. Haury was superintendent of the Suan mill of the Seoul Mining Co., at Holkol, Korea. Returning to the United States, he engaged in mining work in California and Nevada from 1917-1920.

P. S. Haury

Toward the end of 1920, he joined the California State Mining Bureau as a petroleum engineer, afterwards resigning to take up work with the United States Bureau of mines. While attached to the Bureau's Dallas office he wrote an exhaustive report on the Smackover, Arkansas, field in conjunction with R. B. Kelly, now chief petroleum engineer at Fort Worth for the Pure Oil Co.

Mr. Haury was with the Pure for a time after leaving the Bureau. He joined the Simms organization several years ago.

* * *

A. C. Gailbraith, formerly advertising manager of the Union Oil Co. of California and afterwards identified with other interests in Los Angeles, couldn't resist the smell of petroleum. He is now attached to the executive department in a foreign marketing capacity. He is expected back at Los Angeles headquarters from Australia late in May.

* * *

Jack M. Sickler, formerly of the Union Oil Co. of California, now operates as a consulting geologist in Pacific coast territory, making his home in Pasadena. He is a native of Salem, New Jersey, but was graduated from Leland Stanford university, Palo Alto, in 1915.

His first oil work was with the Empire Gas & Fuel Co., in 1916-1917. Later, after returning from service in the World war, where he served as First Lieutenant, 122nd Engineers, U. S. Army, he was identified with field work of the Midwest Refining Co., from 1919-1922.

In the summer of 1922 he became identified with the Union, remaining in its geological department until his resignation to take up consulting practice. Mr. Sickler holds memberships in the American Association of Petroleum Geologists, the Geological & Mining Society of America and the Los Angeles University Club.

* * *

Edgar L. Marston, who divides his time between Burlingame and Los Angeles, has been elected chairman of the board of directors of the United Pacific Securities Corp. He is identified with the oil business as chairman of the board of the Texas Pacific Coal & Oil Co., of which his son, Edgar J. Marston, Fort Worth, is president. Lawrence S. Howard was elected president of the United Pacific Securities Corp., to succeed the late Edward L. Doheny, Jr.

* * *

William A. Vinson, oil lawyer and head of the firm of Vinson, Elkins, Sweeton & Weems, Houston, is chairman of a commission of 16 named by the Presbyterian synod to work out arrangements for the consolidation of

Jack M. Sickler

Austin College at Sherman, Daniel Baker College at Brownwood and Texas Presbyterian College at Milford. Under consolidation plans a new location, for which Houston is bidding, would be worked out.

* * *

W. F. Taylor, general superintendent of foreign operations of the Richmond Petroleum Co., subsidiary of Standard Oil Co. of California, is now on the ground looking after Venezuelan operations. He will make an inspection trip to Colombia while in South America.

* * *

Walter B. Lang of the United States Geological Survey is president of the Geological Society of New Mexico. Other officers are Frank Prout, Empire Gas & Fuel Co., vice president; Burton Headley, Southern Petroleum Exploration Co., Box 781, Roswell, secretary; Morgan J. Davis, Humble Oil & Refining Co., treasurer.

* * *

Some weeks ago, Everett R. Filley was named acting manager of the Kansas - Oklahoma - Kentucky producing division of The Texas Co., after E. J. Nicklos had resigned to become vice-president of the Marland Production Co. The company now has removed the word "acting" from the title. Mr. Filley came up from a clerkship in the old Producers Oil Co., whose properties were years ago acquired by The Texas Co.

* * *

George Stogner, Chickasha, Okla., has sold his gas properties in the Chickasha field to the Oklahoma Natural Gas Corp., Tulsa. Twenty producing wells, with open flow capacity of about 400,000,000 feet daily, and 400 acres leaseholds changed hands in the deal.

Must you have special tools for Regulator Repairs?

A VISE, a wrench, a screwdriver—essential equipment of even an apprentice's workbench—are all you need to take apart and reassemble the Oxweld Stem Type Oxygen or Acetylene Regulator.

Reliable
Economical
Long Lived

Typically Oxweld

These Oxweld Regulators are the last word in regulator design. They are simple—few working parts. They are rugged—no delicate mechanism to get out of order. They are dependable for any volume of gas under almost any atmospheric condition.

OXWELD

WELDING AND CUTTING APPARATUS AND SUPPLIES

OXWELD ACETYLENE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

NEW YORK
Carbide and Carbon Bldg.

CHICAGO
Carbide and Carbon Bldg.

SAN FRANCISCO: Adam Grant Building

O'Connell Zone Wells Add to Santa Fe Springs Output

LOS ANGELES, April 26

EARLY reports from the operating companies in the California fields, outside the San Jaoquin Valley, indicate that the first curtailment order issued by Umpire van Deinse is being observed. San Joaquin Valley fields were not included in the first general curtailment order, but meetings of operators now being held are expected to result in agreement on proration, so that the second order will cover the entire state.

Among several rumors that are heard concerning the success of proration, is one that deserves more than ordinary attention. This report is that while some companies are shutting down their wells for the amount specified in the first order, they are at the same time endeavoring to bring in new wells in such a manner as to keep their daily average production up to its previous figure. That is, by taking advantage of wide open production allowed for 10 days, under the order, they are attempting to offset any effect the pinching in might make on their total production.

Some operators are being accused of trying to pay for their wells in the ten days and, in order to get the maximum production during this time, a few are flowing from an open hole, even at the risk of loss of future production through injury to the hole.

It was not expected that the first, or even the second or third orders, would procure the desired result, as it is difficult to bean a well down immediately. Umpire van Deinse expects to have something to show soon after issuing the second order, and reports that the majority of the companies are rapidly falling in line.

Approximately 29,800 barrels of flush oil was added from the O'Connell zone at Santa Fe Springs. Among the important completions in the lower sands were Associated Oil Company's Green No. 3 for 6500 barrels of oil and 5 million cubic feet of gas, from a depth of 6910 feet; Universal Consolidated Oil Co.'s Blanchard No. 10, from a depth of 6690 feet, for 5420 barrels of oil and 3½ million cubic feet of gas; and Wilshire Annex Oil Co.'s Koontz No. 3, for 9980 barrels of oil and 8 million cubic feet of gas, from a depth of 6860 feet. The last named well is the initial producer from the Clarke zone, that has had so many operators stumped because of the difficulty of obtaining a successful water shut-off.

Deep sand drillers at Santa Fe Springs are looking forward to big times in the near future. The Clarke sands are practically untouched and from all indications are expected to give a new peak to the field in the early part of May, unless the control measures are well under way by that time.

Associated Oil Co.'s Clarke No. 2, with the longest water string on record, is making a bailing test after obtaining what is apparently a successful water shut-off in the lower Clarke, at 7800 feet. General Petroleum Corp. poured 200 sacks of oil-well cement and 250 sacks of coarse cement into its Jock No. 111, after having refrigerated the hole with several truck loads of ice.

Officials of the company believe that a successful water shut off has been made. Although the well tested a little wet, the water is thought to be coming from within the sand rather than from the overlying water sand.

A group of four wells, with an average of 2500 barrels daily, boosted the Signal Hill production total up to, if not beyond, the 200,000-barrel mark. Richfield Oil Company increased its Long Beach output 8000 barrels through three new completions; Bernstein No. 4, from 7335 feet, for 3600 barrels; Butler No. 1, flowing 1900 barrels from a depth of 7100 feet; and Meader No. 2, with 2500 barrels from 7020 feet. These three wells combined have an aggregate production of 10 million cubic feet of gas.

Company geologists believe that the producing sands will extend for an additional 400 to 500 feet. In addition to 7 new drilling permits issued for the Long Beach field for the week ending April 20, a number of operators have indicated their intention of deepening four shallow-zone producers.

Barnsdall-Rio Grande joint interests have already commenced to shut in their recent Elwood producers. This field now has an average daily production of 30,000 barrels.

In the other California fields there has been very little activity, although some important developments are expected soon at Inglewood and Lawndale. The latter field has had three semi-completions during the past week that have raised the hopes of interested operators. Ethyl-O'Gorman No. 1 looked like a gusher, but, after one or two big heads, died down and is now producing only gas. It is believed that the perforations are too fine and become clogged. Within the coming week more will be known about this doubtful field.

Summer Hours Effective May 1 on Coast

LOS ANGELES, April 26.—California Oil and Gas Association announces through its bureau of public information, that the oil industry in California will on May 1 adopt summer office hours. The purpose of this change, which will be in effect from May 1 to October 1, is to enable office employees to obtain more recreation.

The Association suggested to its member companies that, by means of a questionnaire they ascertain whether or not their employees were in favor of this change in summer office hours, that is in making them from 8 a.m. to 4:30 p.m., instead of from 8:30 to 5. The vote was so overwhelmingly in favor of the idea that a resolution was immediately adopted, by the board of directors of the Association, in favor of the above plan.

Kansas Producers Meet

(By Telegraph)

TULSA, April 29.—The Eldorado, Kansas, field chapter of the A.P.I. Division of Development and Production Engineering got under way with an organization meeting at Oil Hill, April 26. Max M. Mahaffey, district foreman for The Empire Oil & Refining Co., was elected chairman of the local chapter. Herman Trapp, drilling contractor, was elected vice chairman and H. E. Wamsley, division production c'erk for Skelly Oil Co., was made secretary.

The first field meeting of the local division will be held the first Tuesday in June with regular monthly meetings to follow on the first Tuesday in each succeeding month. Shooting wells will be the first topic, discussed.

The regular spring meeting of the Oklahoma-Kansas division of the infant member of the A.P.I. will be held in Tulsa, late in May.

D. M. McCarty, formerly with the Parkersburg Rig & Reel Co., and now with the Wertzberger Derrick Co. is back in his accustomed haunts after a long and serious illness. Mr. McCarty has had a tough time of it, nearly getting himself drowned while on a fishing trip last fall, and following this harrowing experience with his recent sick spell. However, in spite of losing more than 50 pounds weight, "Dan" is navigating with his accustomed cheerfulness, the well known McCarty grin being much in evidence.

Oil Scouts May Merge With National Body

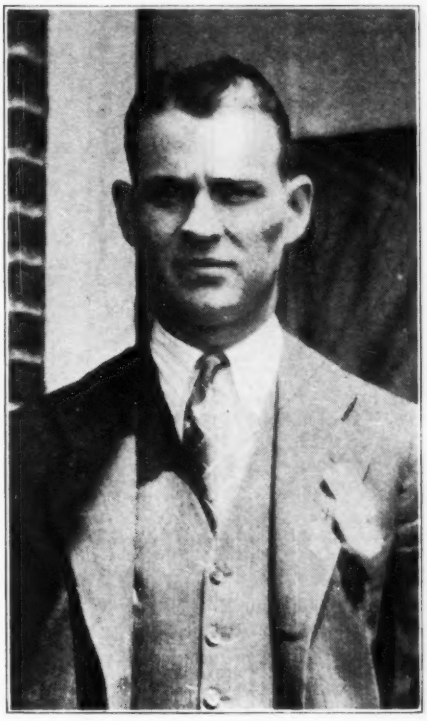
WICHITA, April 27

THE Mid-Continent Oil Scouts and Land Men's Association will in all probability be merged with the National Oil Scouts Association in the near future. The Mid-Continent Association, composed of oil scouts and land men employed in Oklahoma and Kansas, voted at the business meeting of the convention held here in Wichita April 26 and 27 to instruct their officers and board of directors to meet with officials of the National Association for the purpose of formulating a constitution which would be acceptable to both organizations, and which would serve as a medium toward the merging of the two groups.

At the business meeting held the morning of the second day of the convention R. P. (Bob) Brewer, scout for the Barnsdall Oil Co. in the Wichita district was elected president of the Mid-Continent association for the coming year. He succeeds Fred J. Hill, Mid-Continent Petroleum Corp. Ralph Walkingstick, Tidal Oil Co. was elected first vice-president, C. R. Pigott was elected second vice-president and M. P. (Pat) Norwood was elected secretary and treasurer. Their term of office begins immediately, to run until the convention scheduled for next year.

Registration and the preliminaries of the golf tournament occupied the first day, with a banquet, at which L. E. Phillips of the Phillips Petroleum Co. and Ray M. Collins, Seminole's proration umpire, were the principal speakers. The scouts were welcomed to Wichita by Frank Priest, of the Wichita Chamber of Commerce. The scouts response was made by John Power, staff writer for NATIONAL PETROLEUM NEWS, who thanked the business men of the city for the hearty cooperation which they had given the organization in arranging and carrying out the program.

Mr. Phillips spoke on the need in industry in general and the oil industry in particular, for executives who knew the intimate details of the conduct of the business in which they were engaged. A scout has an unusual opportunity to gain such a knowledge, he said, for the varied nature of a scouts report requires that he be familiar with nearly every phase of the conduct of the oil business. Hard work, he told the scouts, would be rewarded, but intelligent hard work would naturally be rewarded even more.



R. P. Brewer, new president of the Mid-Continent Oil Scouts and Land Men's Association

In his remarks, Mr. Collins touched on what Seminole had meant to the oil industry in terms of overproduction. He complimented the scouts on the way in which they had covered the field's development, and told them that the corporation commission had relied on the figures supplied by the scouts in determining the various proration percentages.

The scouts association was regarded by many, he said, as a clearing house for information on locations, drilling depths and production. Cooperation in any phase of the industry is based on mutual good faith, said Mr. Collins, and the manner in which the scouts cooperated was entirely to their credit. He further complimented the scouts on the accuracy of their information, saying that it had been his experience that "scout dope" was to be relied on much more than the reports and rumors turned in by the ordinary field men.

The afternoon of the second day of the convention was given over to a barbeque at the Pryor and Lockhart lodge northwest of Wichita. A ball at the Broadview Hotel, convention headquarters, closed the convention.

Seen and heard at the Mid-Continent Oil Scouts and Land Men's Association Fourth Annual Convention.

Rex Dawson looking for a bridge game after the banquet.

Bill Thawley, chief scout of the Gypsy Oil Co. looking glum because he had missed the first day's activities.

The look on Si Crites face when he was at last relieved of the duties of secretary and treasurer. (He had filled this post with great credit during the past two years).

Cliff Savage's ready smile for everyone.

The hard working members of the organization, present at every convention of every organization, who never relax in their efforts to make the meeting a success. The equally everpresent boisterous ones, who never seemed to relax either.

Rusty Welch, land man for the Shell Petroleum Corp. in the Wichita district eating barbequed chicken and baked beans as though he had never eaten anything before.

Completions in North Louisiana and Arkansas, Week Ended April 26, 1929

LOUISIANA

Caddo Parish

Company	Well	Location	Depth	Yield
W. D. Chew	Fee-B-2	33-21-15	907	50M gas
Dixie Oil Co.	Robertshaw No. 96	13-21-15	1753	90 bbls.
Simplex Oil Co.	Baird No. 4	22-20-15	2220	40 bbls.
Nemours Corp.	Ellerbe No. 1	18-15-12	2528	S. W. Abnd.

De Soto Parish

R. O. Roy	G. W. Sample No. 1	1-13-14	3102	Dry, abnd.

Union Parish

Feazel and Inabet	J. A. Peak No. 1	16-20-4E	2144	17M gas

Ouachita Parish

Southern Car. Co.	Fairbanks No. 12	34-20-4E	2158	8½M gas
Imperial Oil & Gas.	Stubbs No. 7	44-19-3E	2195	4½M gas.
Pipes and Mack	McGee No. 2	10-18-4E	2213	3M gas
Union Carbon Co.	Spade No. 2	36-19-3E	2197	5½M gas

Morehouse Parish

Company	Well	Location	Depth	Yield
Interstate Nat. Gas	Fleming No. 1	15-20-4E	2163	22½M gas
Southern Car. Co.	Tex. Delta No. 9	2-20-4E	2180	5M gas

ARKANSAS

Ouchita County

McDonald Bros.	Wilson No. 1	25-15-18	2873	45 bbls

Union County

Ohio Oil Co.	Sam Oliver No. 1	7-17-13	3048	1750 bbls.
Ohio Oil Co.	B. H. Raulston No. 1	12-17-14	3017	150 bbls.
Carter Bell et al.	Terrell No. 1	27-18-14	2594	Dry, abnd.

TEXAS

Panola County

Nat. Gas Prod. Co.	Floyd No. 3 B. S. Jordan HRS		956	5M gas

Completions in Oklahoma and Kansas, Week Ended April 27, 1929

OKLAHOMA

Cotton County

Company	Well No.	Location	Depth	Init. Prod.
Everetts	1	SEc NW 36-4-13 W	T.D. 2510	Dry
Shasta	1	NEc 34-1-11 W	T.D. 2606	Dry

Creek County

Flynn-Morgan	1	NW NE SW 17-14-8 E	T.D. 4050	Dry
Parafine-Reliance	1	NE SW SW 16-16-12 E	T.D. 2772	Dry
Thompson-Black	2	NWc SW 16-17-11 E	T.D. 2225	Dry
Cole et al	1	NW SE SE 32-18-11 E	T.D. 1940	Dry
Carter	2	NW NE NE 18-16-9 E	3033-3035	170

Grant County

Gibson	1	C N½ SW 7-28-1 E	T.D. 2250	Dry

Hughes County

Sunray	2	SE NW NE 19-5-8 E	2460-2525	1200
Independent	1	SE SW NE 6-8-9 E	3419-3429	68M

Kay County

Harris-Haun	1	C N½ NE 36-28-1 W	T.D. 952	1/5M
Lenoard et al	2	SWc NE 28-27-1 E	840-890	¼M
Marland	1	C NE NE 18-29-1 E	T.D. 3541	Dry

Kiowa County

Cloys	1	NWc NE 33-7-17 W	T.D. 1026	Dry
Stahl-Burris	1	NWc SE SE 18-6-16 W	445-448	8

McClain County

Mid-Continent	1	SEc 22-5-3 E	T.D. 3492	Dry

Muskogee County

Williams	1	CNL SE NE 17-15-17 E	T.D. 1450	Dry

Okfuskee County

Barnsdall	1	SE NE SE 24-11-10 E	T.D. 2472	Dry
Umburn-Atlantic	7	CSL SE NW 2-10-11 E	1730-1718	20
Prairie	1	NE SE SW 29-12-10 E	3320-3322	800

Okmulgee County

Kirkland-Son	1	NEc NW NW 20-15-13 E	1470-1554	12

Osage County

Elliott	1	SE NE SE 33-22-11 E	2089-2098	40
Tidal	1	SWc SE 24-24-8 E	2120-2161	5
Kewanee	9	NE NW SE 34-27-6 E	2778-2829	10
McGill	1	SWc SE 8-22-8 E	T.D. 3128	Dry
Jones et al	1	SWc SE 28-23-9 E	T.D. 482	Dry
Peters	2	NWc SW 28-24-9 E	T.D. 2400	Dry
Carter	2	SW NW SW 34-26-6 E	T.D. 3052	Dry
Carter	3	SE NE SE 33-26-6 E	T.D. 3065	Dry
Carter	1	SEc NE 33-26-6 E	T.D. 3221	Dry

Payne County

Prairie-Slick-Shell	1	NEc NW 3-17-6 E	T.D. 4191	Dry

Pontotoc County

Wilcox	1	NW SE NW 23-4-7 E	T.D. 1840	Dry

Pottawatomie County

Gypsy	6	SW NE SE 18-8-5 E	4020-4045	47
Amerada-Barnsdall	3	SE SW SW 17-8-5 E	4075-4102	405
Wilcox	3	NE NW SE 8-8-5 E	4026-4027	700
Magnolia	2	NEc NW 31-7-5 E	4409-4413	12
Magnolia	1	SW SE SE 7-7-5 E	4211-4218	85
Blackwell	2	NE NW NE 25-7-4 E	4160-4170	225

Seminole County

Sinclair	1	NEc SW 18-9-7 E	4250-4261	1565
Carter	1	C SW SE 23-7-6 E	3110-3117	17M
Amerada	2	SE SW NE 7-8-5 E	4330-4331	140
Skelly-Atlantic	4	NWc 6-9-6 E	4318-4325	660
Burke-Greis	2	SW NE NE 1-9-5 E	4552-4581	460
Magnolia	3	SWc NW 17-5-8 E	2560-2615	290
Prairie-Slick	1	SWc NW 22-10-7 E	T.D. 3710	Dry

Stephens County

Magnolia	7	NWc SW SE SE 25-1-9 W	T.D. 2285	Dry
Fossett et al	3	SWc NW NW SW 19-1-8 W	T.D. 1531	Dry
Magnolia	21	NWc SE SE SW 34-1-8 W	1638-1645	65
Clark-Cowden	3	NW SW SW 13-1-4 W	2857-2986	60

Wagoner County

Chicago Drlg	2	CEL NW NE 13-16-17 E	T.D. 438	Dry

KANSAS

Note—Not Reporting

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended April 27, 1929

OKLAHOMA

Carter County

Company	Well No. & Farm	Location
Gypsy	2-Morris	CSL NW SW 28-2-3 W OWD

Cotton County

Lawton	2-Sanders	SEc NW 3-2-10 W OWD
Silurian	5-Chambers	SWc NW SE NW 2-2-10 W
Cooper-Badgett	1-Wilson	SEc NW 15-2-11 W
Linsen	1-Lawler	NW NE NW 14-2-11 W OWD

Creek County

Kawfield	7-Snelling	CEL SW NE 9-15-10 E OWD
Slick	1-Cross	NWc SE 16-16-10 E
O'Rourke et al	1-Hunts	NWc SW SE 16-16-10 E
Irelan et al	1-Smith	CEL SW SE 11-17-10 E
Magnolia	7-Dix	CEL SE SE 32-18-7 E OWD

Hughes County

Prairie-Slick	1-Deer	SWc NW 4-8-9 E
Indep.-Gypsy	1-Marshall	NEc SW 7-8-9 E

Jefferson County

Lesh-McCall	1-Moore	SWc SE NE NE 13-2-8 W

Kiowa County

Boring	1-Suhren	SEc NW SE NE 22-6-16 W
Christian	1-Stone	SEc 18-7-18 W

Muskogee County

Mussellem	1-McCullough	SWc 34-14-19 E
Decius-Garrett	1-Washington	NEc NW 18-14-18 E
Cook-Day	1-Fields	CSL N½ N½ S½ 9-15-18 E

Noble County

Prairie-Slick	1-Waltermire	SWc NE 33-21-1 W

Okfuskee County

Prairie	2-Miracle	SEc SW 29-12-10 E
Tidal	1	NEc SW 22-10-11 E
Umburn	2-Hildebrandt	C NE SE 12-10-11 E
Umburn	8-Simmer	SEc NE NE 11-10-11 E
McMahon-Carey	1-Sproleder	NE SW SE 29-12-10 E

Oklahoma County

Company	Well No. & Farm	Location
Mid-Kans. & Ramsey	1-Trosper	NEc NW 19-12-1 W

Okmulgee County

Chief Drlg	1-Smith	NEc SW 17-13-11 E OWD
Kirkland-Mid-Continent	1-Barnett	NEc SE SE 18-15-13 E
Wallace	6-Colbert	NWc SW NE 14-14-14 E
McClain-Miller	1-Stewart	NEc NW SW 24-14-14 E

Osage County

Fields-Potts	2	SWc NE NW 30-23-12 E OWD
Dev.-Billingslea	2	CEL NW 6-23-9 E
I. T. I. O.	2	SWc NE SW SW 28-23-9 E
Winona	2	NW SW SW 27-24-10 E OWD
Carter	1	SE SW NW 34-26-6 E
Okla. Natural	788	NEc 15-21-10 E

Pottawatomie County

Prairie	1-Rice	SWc NE 17-7-4 E
Gypsy	1-Green	NWc SE 17-7-4 E
Wrightsman	1-Blodsoe	NW SW NW 20-6-4 E
Prairie-Slick	1-Laster	NE SE NE 19-6-4 E
Simms et al	1-Alexander	SEc 18-6-4 E
Simms	1-Swift	SWc 17-6-4 E
Magnolia-Pierce	2-Eubanks	SEc NW 17-7-4 E

Pawnee County

Nadine	4	NWc NE 7-20-7 E
McMann et al	1	NWc NE 34-20-9 E

Roger Mills County

Bucy-Stone	1-Williams	C SW 25-12-24 W

Seminole County

Prairie	1-Patten	NWc NE 18-6-8 E
Amerada	1-Hotulke	SE SW SE 22-7-6 E
Texas-Indep	3-Hotulke	SW SE SE 22-7-6 E
Prairie	1-Raitman	SEc NW 18-9-6 E
Carter	1-Factor	SEc NW 26-7-6 E OWD
Sinclair	5-Cudjo	NWc NE NW NW 35-9-6 E
Prairie	10-Billington	NE SW NW 11-8-5 E
Prairie	11-Billington	NW SW NW 11-8-5 E
Prairie	1-Holman	NW SE NE 26-7-6 E
Prairie-Slick	9-Campbell	SE NW NE 6-9-6 E

(Continued on Page 55)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended April 27, 1929

(Continued from Page 54)

Company	Well No. & Farm	Location
Prairie-Slick	3-Cudjo	NEc NW NW 26-7-6 E
Prairie	4-Cudjo	SE NW NW 26-7-6 E
Prairie-Slick	1-Dixon	NWc NE 4-8-7 E
Prairie-Slick	1-Carr	NW NE NW 9-7-7 E
Gypsy	9-Cotcha	NW SW SW 23-7-6 E
Independent	3-Carpenter	NW NE NE 27-7-6 E
Magnolia	2-Anderson	NWc SE 18-9-6 E
Magnolia	3-Anderson	SWc NE 18-9-6 E
Magnolia	4-Anderson	NEc SW 18-8-6 E
Carter et al	1-Shaffer	NEc NW 35-10-6 E
Marland	1-Boring	NE NW SE 17-9-7 E
Barnsdall	1-Lusty	SWc NE 13-5-7 E
I. T. I. O.	1-Parnosky	NW SE SE 7-6-8 E
Barnsdall	2-Kepeya	SW SE SW 7-9-7 E
Carter	2-Factor	SW SE NW 26-7-6 E
Gypsy	2-Payne	SW NE NE 5-7-7 E
Gypsy	1-Coker	SE SW SW 2-8-5 E
Papoose	1	SEc NW 32-10-6 E
Hoffman et al	1-Tecumseh	SEc SW 24-5-5 E
Texas	12-Lucy	NW NE NE 19-5-8 E
Texas	11-Lucy	SW SE SE 18-5-8 E
Texas	10-Lucy	NE SE SE 18-5-8 E
Indep	1-Carpenter	NEc 27-7-6 E OWD
Gypsy	10-Cotcha	SE SW SW 23-7-6 E
Barnsdall	3-Hotulke	SE NE SE 22-7-6 E
Carter	2-Coker	SW SE SW 2-8-5 E
Stephens County		
Smythe et al	1-Shaw	C NE NE 27-2-8 W
Magnolia	24-Kagay	SWc SE SW 34-1-8 W
Franklin	2-Brake	SW NW NE 12-1-4 W
Pace-Continental	2-Houston	SWc NE NE SW 2-2-8 W
Tulsa County		
Hoss-Glidden	2-Hawkins	SE NW SW 18-19-12 E
Wagoner County		
Newman	2-Bruner	NWc SW 18-17-17 E

KANSAS

Note—Not Reporting

TEXAS

NORTH CENTRAL AND EAST CENTRAL

Company	Well No. & Farm	Location	Survey
Anderson County			
Pure	1-Jackson	.....	Kinley
Brown County			
Curry	4-Chambers	Blk-147	Logan
Sinclair	1-Long	Sec-37 Blk-1	HT&B
Kessler et al	1-Bryson	Blk-282	Jones
Paramount	8-Mayes	Blk-609	Ross
Beasley et al	1-Dalney	Blk-318	Wharton
Burtner et al	2-Wise	.....	Montez et al.
Callahan County			
Duffey et al	1-Graves	Sec-90 Blk-13	T&P
Texas	2-Hatchett	Sec-23	D&DA
Moutray	2-Finley	Sec-75	BOA
Moutray	4-Hatchett	Sec-23	D&DA
Beams	2-Snyder	Sec-140	BBB&C
Warren et al	1-Hatchett	Sec-24	D&DA
Warren-Hays	5-Able	Sec-32	D&DA
Gunn Drlg	1-Orrell	Sec-97	Comal Co. Sch. Ld.
Bradstreet-Holden	1-Swafford	.....	Vigal
Cherokee County			
Humble	2-Elliott et al.	.....	Garcia
Coleman County			
Chapman et al	1-Fuller	Blk-751	Martinez
Chapman et al	3-Fuller	Blk-751	Martinez
Mattocks-Midsun	1-Hutchins	Sec-11 Blk-1	GH&H
Samuels et al	1-Gill	Blk-69	Camon
Taylor	2-Young Bros.	Blk-192	Greer
Clark-Cowden et al	1-Webb	Blk-179	Young
Eastland County			
Southern Oil & Prod.	1-Thorpe	Sec-456	SP
Gholson et al	2-Fox	Blk-28	McClennon Co. Sch. Ld.
Goodwin et al	3-Parker	.....	Van Norman
Erath County			
Associated	2-Carey	.....	Espinasa
Wickens	1-Bowden	.....	Johnson
Jack County			
Staley	1-Terrell	.....	Rockerfellow
Panhandle Prod	3-Smith	.....	Hughson
Harper et al	2-Box	.....	Hughson
Perry-Boller	1-Raley	.....	Hughson
Texas	1-Daugherty	.....	Hughson
Palo Pinto County			
Stiff et al	1-Costello Bros.	.....	Lazarin
Shackelford County			
Frizzell-Smalley	1-Mathews	Sec-56	ET
Midland	1-Porctor	Sec-166	ET
Stephens County			
Texas Pacific	10-Newell	Sec-1174	TE&L
Lone Star	4-Elliott	Sec-55 Blk-7	T&P
Lone Star	3-Elliott	Sec-55 Blk-7	T&P
Mid-West Explor	1-Dannehold	Sec-1504	TE&L
Throckmorton County			
Proffitt et al	1-Walker	.....	McCoy
Hobbs	1-Carthey	Sec-225	BBB&C
Taylor County			
Root et al	1-Martin	Sec-30 Blk-19	T&P

NORTH TEXAS

Company	Well No. & Farm	Location	
Archer County			
Bradstreet	1-Benson	Sec-1808	TE&L
Josey et al	2-Prideaux	Blk-24	Dorsey
Wolfe-Son	1-Campbell	League-4 Blk-26	Denton Co. Sch. Ld.
Underwood Drlg	4-Wilson	Sec-12 Blk-3	H&TC
Gohlke et al	3-Wilson	Blk-25	Geraldine
Johnson	2-Garvey	Sec-1859	TE&L
Harrell	1-Brown	.....	SP
Texas	1-Richardson	.....	Scott
Burns	1-Portwood	Sec-2411	TE&L
Petroleum Prod. & United Prod.	1-Coleman	Sec-81	ATNCL
Long	1-Lasater Est.	.....	Pickens
Humble	3-Hamilton	.....	BBB&C
Cont'l. Perkins-Cullum	1-Wilson	Sec-114 Blk-3	ATNCL
Hunter	1-Abercrombie	.....	Abercrombie
Texas	1-American	Blk-69	KWVFL
Baylor County			
Grisham et al	1-Portwood	Sec-1281	TE&L
Cooke County			
Kewanee	4-Hyman	.....	ET
Kewanee	15-Hyman	.....	ET
Montague County			
Benson-American	1-Hoffman	Blk-25	Tilley
Lanier et al	1-Hatt	Blk-10	Conner
Bridwell-Cont	1-Landerback	.....	Robinson
Wichita County			
Golding et al	1-Waggoner Bros.	Blk-24	George
Texas	4-Waggoner Bros.	.....	GC&SF
Heydrick-Stumpf	1-Boyd	Blk-11	Lewis
Wilbarger County			
Waggoner	L-3-Waggoner	Sec-32 Blk-4	H&TC
Staley Wynne	B-3-Waggoner	Sec-25 Blk-4	H&TC
Easter	A-4-Waggoner	Sec-26 Blk-4	H&TC
Derby	C-3-Waggoner	Sec-43	MEP&P
Steadiman et al	B-1-Waggoner	Sec-9 Blk-4	H&TC
Consolidated	0-1-Waggoner	Blk-40	MEP&P
Simpson-Fell	1-Waggoner	Blk-19	BS&F
Staley-Wynne	R-1-Waggoner	Sec-26 Blk-4	H&TC
Gray Back Dev	1-Waggoner	Sec-10 Blk-4	H&TC
Richfield	C-1-Waggoner	Sec-38 Blk-3	H&TC
Staley-Wynne	N-1-Waggoner	Sec-40	MEP&P
Tulsa	1-Waggoner	Sec-6 Blk-17	H&TC
Staley-Wynne	G-4-Waggoner	Sec-32 Blk-4	H&TC
Staley-Wynne	G-3-Waggoner	Sec-32 Blk-4	H&TC
Fain-McGaha	L-11-Waggoner	Sec-31 Blk-4	H&TC
Fain-McGaha	L-10-Waggoner	Sec-31 Blk-4	H&TC
Easter	C-3-Waggoner	Sec-25 Blk-4	H&TC
Empire	C-5-Waggoner	Sec-25 Blk-4	H&TC
Empire	C-4-Waggoner	Sec-25 Blk-4	H&TC
Empire	A-4-Waggoner	Sec-32 Blk-4	H&TC
Waggoner	L-4-Waggoner	Sec-32 Blk-4	H&TC
Golding-Cochran	H-4-Waggoner	Sec-32 Blk-4	H&TC
Young County			
Continental-Under.	1-Campbell	Sec-1376	TE&L
Wilson et al	1-Loftin	.....	Splane
Casey	2-Boone	Abst-34	BBB&C
Under. Drlg. et al.	1-Edwards	Sec-1499	TE&L
Scott-Nanee	1-McBrayer	.....	James
Texas Unity	1-Haygood	Sec-1466	TE&L

PANHANDLE

Company	Well No. & Farm	Location	
Carson County			
Skelly	13-Schaffer	Sec-88 Blk-4	H&GN
Skelly	14-Schaffer	Sec-68 Blk-4	H&GN
Gray County			
Dodson-Shell	1-Saunders	Sec-40 Blk-3	H&GN
F. H. E.	1-Dalton	.....	Ingram
Hutchinson County			
Phillips	1-Sanford	Sec-80 Blk-46	H&TC
Holmes et al	1-Moore	Sec-125 Blk-4	H&GN
Wheeler County			
Gibson	7-Bentley	Sec-42 Blk-24	H&GN
Lone Star	1-Ridinger	Sec-65 Blk-17	H&GN

WEST TEXAS

Company	Well No. & Farm	Location	
Crane County			
Duffey et al	5-Cowden	Sec-17 Blk-X	CCSDRG
Howard County			
Marland	1-Clay	Sec-127 Blk-29	W&NW
Pecos County			
Phillips	2-Ramsey	Sec-17 Blk-194	TC

Completions in Texas, Week Ended April 27, 1929

NORTH CENTRAL AND EAST CENTRAL

Anderson County

Company	Well Farm	Survey Sec. & Blk.	Depth	Init. Prod.
Pure	2-Bruce	Lewis	T.D. 4306	Dry

Brown County

Gray	1-Evans	Hall Blk-38	T.D. 2004	Dry
Humble	21-Hodnett	Harris Blk-784	T.D. 1218	Dry
Hartt-Cole	1-Dixon	Grant Sec-2 Blk-136	T.D. 374	Dry
Bruce	6-Sheilds	Brown	546-563	½M
Brewster et al	1-Wise	Montez et al.	680-682	1½M

Callahan County

Texas	1-Hatchett	D&DA Sec-23	375-382	15
Moutray	3-Hatchett	D&DA Sec-23	401-402	20
Warren-Hays	3-Mable	D&DA Sec-32	415-423	10
Texas	25-Hatchett	D&DA Sec-24	.....	61
Moutray	15-Hatchett	D&DA Sec-24	T.D. 389	Dry
Warren-Hays	4-Able	D&DA Sec-32	T.D. 452	Dry
Sullivan et al	1-Walker	D&DA Sec-30	T.D. 542	Dry
Reiter-Foster	26-Hatchett	D&DA Sec-24	T.D. 415	Dry
Gibson-Johnson	1-Dunlap	BBB&C Sec-151	T.D. 829	Dry
Barnhardt et al.	1-McFarland	Gillispie	T.D. 1070	Dry

Cherokee County

Humble	1-Elliott et al.	Carcia	T.D. 2654	Dry

Coleman County

Sterling	1-Weir et al.	Lappe Blk-744	T.D. 2278	Dry
Roth-Faurot	1-Golson	Murdock Sec-18 Blk-738	T.D. 2300	Dry
Roth-Faurot	1-Cox	BBB&C Blk-18	T.D. 1835	Dry
Jackson et al	1-Davis	Morgan Sec-5 Blk-309	T.D. 3330	Dry
Gwinnup et al	1-Gates	Chavez Blk-44	T.D. 1680	Dry
Hinter	1-Baugh	Perry Sec-5 Blk-95	T.D. 1220	Dry
Dozier	1-Sears	Shanks Blk-243	T.D. 1250	Dry
Chapman et al	2-Fuller	Martinez Sec-12 Blk-751	T.D. 1995	Dry
Barnsdall	1-Tholl	Martinez Sec-12 Blk-751	T.D. 2250	Dry
Cunningham et al.	12-Jennings	Lipscomb Blk-94	1159-1168	5½M

Eastland County

States	7-Calvert	H&TC Sec-17 Blk-4	1899-1906	25
McLester	6-Thorpe	Stubblefield	3602-2740	15
Belva	6-Goode	Stubblefield	3757-3866	15
Taylor	1-Marshall	Moore	T.D. 3400	Dry
Hoffman-Page	1-Butler	H&TC Sec-28 Blk-2	T.D. 1343	Dry

Jack County

Knight et al	1-Loving	TE&L Sec-2776	T.D. 5380	Dry

Jones County

Roeser-Pendleton	11-Cassell	Goliad City Sch. Ld. Sec-4	T.D. 3001	Dry
Cosden et al	6-Brickley	T&P Sec-50 Blk-18	2502-2509	85

Navarro County

Perryman et al	1-Prince	Phifer	T.D. 3205	Dry

Palo Pinto County

Shaw	2-Gilbert	T&P Sec-39 Blk-A	T.D. 3975	Dry
Gordan et al	2-McDonald	T&P Sec-31	T.D. 4870	Dry
Leiser-Sheehold	1-Rector	Burleson City Sch. Ld.	3062-3326	½M
Atlantic	1-Stewart	T&P Sec-50 Blk-4	1847-1875	5M

Shackelford County

Midham	5-Sedwick	TE&L Sec-1561	4010-4345	40
Pet. Prod.	1-Davis	T&P Sec-19 Blk-13	1628-1629	35
Mid-West Explo.	4-Dyer	T&P Sec-85 Blk-12	830-835	55
Midham	25-Moore	TE&L Sec-1561	4360-4382	61
Texas Cons.	1-Jackson	T&P Sec-95 Blk-12	T.D. 1002	Dry
Tannehill et al.	1-Whitney	TE&L Sec-802	T.D. 753	Dry
Tannehill et al.	2-Hild	LAL Sec-2	T.D. 895	Dry
Moncrief et al.	1-Gustaffson	BBB&C Sec-169	T.D. 2016	Dry
Grisham-Hunter	1-Davis	T&P Sec-17 Blk-13	T.D. 1711	Dry
Grisham-Hunter	1-Davis	T&P Sec-16 Blk-14	T.D. 1753	Dry
Gilman-McMurray	1-Mathews	TE&L Sec-584	T.D. 1043	Dry
Croom	1-Goodwin	T&P Sec-48 Blk-14	T.D. 2005	Dry
Crabb-McNeil	2-Mathews	ET Sec-29	T.D. 1212	Dry
Milham	28-Moore	TE&L Sec-1561	T.D. 2135	Dry
Milham	31-Moore	TE&L Sec-1561	T.D. 3641	Dry
McCurdy et al.	1-Smith	Ferguson	T.D. 680	Dry

Stephens County

Tidal	1-Jones	HT&B Sec-125	T.D. 3952	Dry
Root et al.	2-Hitson	LAL Sec-6	T.D. 3295	Dry

Throckmorton County

Cranfill-Reynolds	1-Thomas	BBB&C Sec-244	T.D. 1220	Dry
Cranfill-Reynolds	2-Thomas	BBB&C Sec-261	T.D. 1308	Dry

NORTH TEXAS

Archer County

Wolfe et al	1-Huff	Neil	T.D. 1043	Dry
Turner et al	5-Lyles	Hooper et al. Sec-7	T.D. 1733	Dry
Texas	1-Scott	James	T.D. 1407	Dry
Sheldon	1-Chilson Est.	Denton Co. Sch. Ld. League-3 Blk-2	T.D. 1806	Dry
McLaughlin Bros.	1-Parkey	Dallas Co. Sch. Ld. Sec-21 Blk-2	T.D. 1550	Dry
Marts-Bevens	1-McMurty	Galon	T.D. 901	Dry
Magnolia	1-Kunkel	Stell	T.D. 1450	Dry
Magnolia	2-Kunkel	Stell	T.D. 1260	Dry
Consolidated	1....	Harris Blk-136	T.D. 1607	Dry
United Prod.	1-Brown	Sellers Blk-110	1475-1483	18
Shell	3-Abercrombie	Harris Blk-41	1382-1390	12
Payne et al.	2-Parrish	SP	1578-1591	65
Moran Drlg. et al.	1-Scott	James	1206-1208	43
Gulf Prod.	4-Ward	BBB&C	991-1038	61
Gohlke et al.	2-Wilson	Geraldine Blk-33	1556-1568	380
Bridwell et al.	2-Hamilton	BBB&C Blk-6	1120-1124	21
Josey et al.	1-Prideaux	Dorsey Blk-24	660-672	12

Cooke County

Kewanee	11-Hyman	ET	1159-1201	325
Kewanee	13-Hyman	ET	1085-1250	100

Grayson County

Simpson-Fell et al.	1-Owens	Hulett Blk-3	T.D. 1203	Dry

Wichita County

Panhandle	1-Burnett	Meade	1393-1403	69
Hines	2-Burnett	Meade Sec-6	1394-1402	20
Hi-Land	2-Boyd	Lewis	1774-1790	290
Robertson	1-Waggoner	Willis Blk-3	1728-1730	50
Underwood Drlg. et al.	1-Scott	ET Sec-1	T.D. 2062	Dry
Staley-Wynne	16-Kemp et al.	H&TB Blk-81	T.D. 840	Dry

Wilbarger County

Schucht et al.	1-Waggoner	MEP&P Blk-39	T.D. 2503	Dry
Continental	1-Waggoner	H&TC Sec-33 Blk-6	T.D. 2480	Dry
Cosden	1-Waggoner	H&TC Sec-35 Blk-2	2552-2654	125
Burton et al.	1-Waggoner	MEP&P Sec-40	1877-1878	156

Young County

Paull	6-Allen	Lynch	2090-2100	65
Nash-Winfohr et al.	3-Ware	Pier	3132-3168	40
Pennell	4-Calvin	Rohus	553-560	25
Texas	1-Petty	BBB&C Sec-1	T.D. 854	Dry
Riggs et al.	1-Langston	TE&L Sec-1490	T.D. 646	Dry

PANHANDLE

Carson County

Delmar	3-Noel	I&GN Sec-198 Blk-3	3230-3255	305
Skelly	1-Lederick	H&GN Sec-239 Blk-B-2	2520-2700	20M

Gray County

Texas	6-Davis	I&GN Sec-86 Blk-3	3145-3200	82
Danciger et al.	1-Shaw	ACH&B Sec-5 Blk-1	2666-2678	300
Parton-Holt	1-Gethings	H&GN Sec-14 Blk-A-9	2970-3170	5M
Southern Explor.	3-McConnell	I&GN Sec-174 Blk-3	3271-3273	305
Wilcox	4-Coombs	I&GN Sec-60 Blk-3	2923-2960	400

Hutchinson County

Gulf Prod.	3-Sanford	H&TC Sec-78 Blk-46	2835-2880	63

Wheeler County

Edwards et al.	1-Griswold	H&GN Sec-1 Blk-24	1800-1890	50M
Swain-Miller	1-Woodley	H&GN Sec-21 Blk-24	1905-2010	30M
Texas	1-Goodan	H&GN Sec-91 Blk-17	1830-1897	33M
Angus et al.	2-Morgan	H&GN Sec-93 Blk-17	1700-1930	8M

WEST TEXAS

Crane County

Gulf Prod.	6-Waddell	PSL Sec-12 Blk-B-25	3307-3480 P.B. 3379	75 (23 Hrs.)

Crockett County

Tidal	1-Weathered	H&TC Sec-30 Blk-31	T.D. 1960	Dry
Young-Connelly et al.	2-Todd	GC&SF Sec-53 Blk-UV	T.D. 2010	Dry

Fisher County

Mid-West Explor.	1-Newman	H&TB Sec-44 Blk-1	T.D. 3300	Dry
Cranfill-Reynolds	1-Brown	Richardson Sec-4 Blk-R	3193-3197	52

Glasscock County

Gibson-Johnson	1-Mann	T&P Sec-6 Blk-33	T.D. 3630	Dry

Howard County

Amer. Maracaibo	4-Settles	T&P Sec-6 Blk-32	2244-2248	957 (12 Hrs.)
Magnolia	18-Roberts	W&NW Sec-136 Blk-29	2545-2555	14 (14 Hrs.)
Marland	4-Chalk	W&NW Sec-140 Blk-29	1764-1770	186
Mid-West Explor.	3-Clay	W&NW Sec-138 Blk-29	1784-1806	180

Mitchell County

Simms	2-Edward	SP Sec-29 Blk-18	596-606	5½M

Pecos County

Southern Crude	1-Scharbauer	TS&TL Sec-21 Blk-134	T.D. 4332	Dry
Benedum-Trees	1-Cowden	CCSD Sec-44 Blk-2	T.D. 3715	Dry
Grayburg	1-Univ.	Univ. Sec-2 Blk-17	T.D. 1950	Dry

Reagan County

California	5-Univ.	Univ. Sec-16 Blk-7	T.D. 3272	Dry

Completions in California, Week Ended April 22, 1929

Long Beach

Company	Well. No	Location	Depth	Init. Prod.
Bush, R. R.	Barnes 2	....	7155	2006
Richfield	Bernstein 4	....	7334	3320
Richfield	Butler 1	....	7100	790
Roggie-Simmel Oil	No. 1	....	7235	115
Shell Oil Co	Pickler 11	....	6727	197
Woolner Oil Co.	Osberne 3	....	7265	2155

Santa Fe Springs

Associated Oil Co.	Green 3	....	6915	7569
General Pet. Corp.	152 E	....	5400	1065
General Pet. Corp.	Anderson 153D	....	5910	1356
General Pet. Corp.	S. F. Community 186E	....	5565	400
General Pet. Corp.	S. F. Community 179 D	....	5348	960
General Pet. Corp.	S. F. 179 E	....	5050	935
Rhode	O. J. York 2	....	7408	3000
Shell Oil Co.	G. H. N. 19	....	5945	735
The Texas Co.	Baldwin 4	....	6840	5466
The Texas Co.	Matern 2-8	....	6470	2400
Union Oil Co.	Farwell 11	....	5865	2500
Union Oil Co.	Howard 10	....	6565	6010
Universal Oil Co.	Blanchard 10	....	6349	5565
Whilshire Annex Oil.	Koontz 3	....	6865	9887

Seal Beach

Marland Oil Co.	McGrath-Selover 6	....	5420	1660
Standard Oil Co.	San Gabriel 6	....	5121	1327

Huntington Beach

Standard Oil Co.	Thompson 5	....	3611	115

Ventura Avenue

Assoc. Oil Co.	Lloyd 46	....	6250	1646
Assoc. Oil Co.	Lloyd 71	....	7365	3048

Elwood

Barnsdall-Rio Grande	Doty 4	....	3750	3445

Fruitvale

Western Gulf Oil Corp.	K. C. L. C1	....	4007	600

Mt. Poso Creek

Superior Oil Co.	Glide 11	....	1718	200

Regulation of "Beans" on California Wells Increases Production

By Paul Wagner
N. P. N. STAFF WRITER

LOS ANGELES

IN PROMOTING the efficiency of flowing oil wells through the regulation of "bean" (choker) sizes, the Richfield Oil Co. has found it also accomplished gas conservation in the Long Beach, Santa Fe Springs and Lincoln fields of California.

On attacking the problem, the Richfield found that each well must be treated individually; the factors of efficiency found in one may not apply to the same degree in another. Accordingly, it could be assumed that principles successfully applied in one well were only alike to be useful in other wells or fields.

It was decided to establish accurate records to include decline curves on oil production and gas addition to charts on tubing and casing pressures, as well as auxiliary graphs showing gas/oil ratios and the relation thereto of "bean" sizes.

The work was carried on through cooperation of W. E. (Steve) Dunlap, manager of the production department; F. G. Taves of the gas department and L. E. Porter, chief geologist.

Diverting from the common custom of having "bean" sizes regulated by men in the field, based only on their judgment of comparative production of a few days before the change, the Richfield began basing its control of wells on the system then installed. The system, of course, called for cooperation of the entire production department.

After several months of keeping records in the form of curves it was shown that there were two features of the program that needed remedying. It was found (1)—that the average type of pressure gages used on tubing and casing were unsuited for careful work, and (2)—that a method had to be established for checking the sizes of the "beans" installed at the wells.

The first problem was overcome by the installation of continuous recording pressure gages. A dual hand gage was used with a single sheet to record both the tubing and casing pressures at the same time. The second problem was overcome by having one man in each field responsible for individual "bean" changes, recording his changes in writing on the pressure chart for the particular day when made.

All of the Richfield's flowing wells in the Long Beach field were equipped with pressure gages and the individual curve system was installed for each well. The result was that the company was able to sustain a steady but minimum production decline.

The curve of each well appeared more or less as a straight line. When compared with offset wells on which no system had been installed the increased cumulative production of the equipped well, or wells, was apparent.

About six months after the work

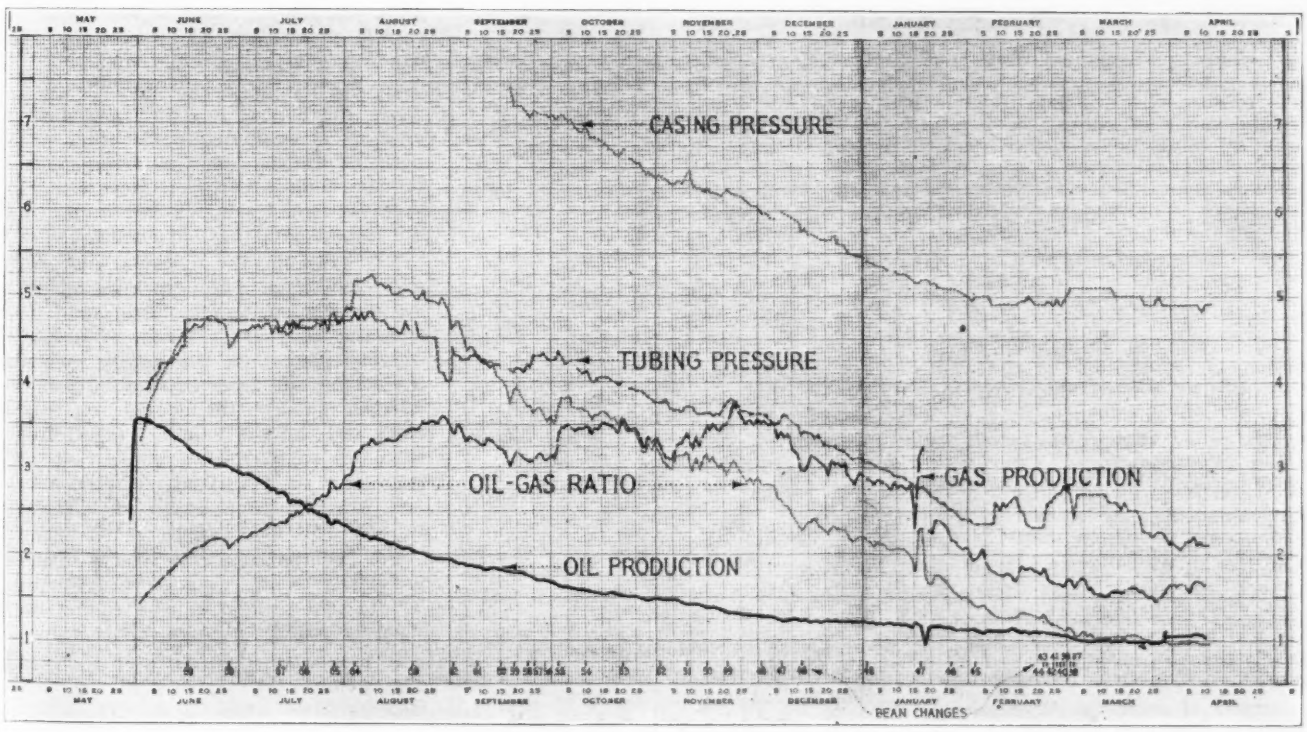


Chart on a typical deep zone well in Long Beach field made by Richfield Oil Co. engineers. Side scales 1 to 7, represent thousands of barrels of oil, millions of cubic feet of gas or hundreds of pounds of pressure. Gas oil ratios are represented in thousands of cubic feet per barrel on the same scale. "Bean" changes are in sixty-fourths of an inch, as, for example, 69/64, 67/64, and so forth. Note effectiveness of "bean" changes throughout month of September on the Long Beach curve, in reducing gas production from 5,500,000 to 3,000,000 cubic feet; at same time sustaining very gradual pressure decline on casing

had been started certain mechanical features in connection with the flowing of the wells began to make themselves felt. It was found that wells which had been properly tubed, and proper correlative water shutoffs made, produced from 5 per cent to 25 per cent more oil at the end of a five and a half months' period than offset wells that had not been similarly handled.

The divergence in cumulative production increased and at the end of a 12 months' period amounted to almost 52 per cent, thus showing the advantage of tubing California wells in the fields mentioned.

On further investigation it was found this efficiency of increased production was apparent only in those wells having an oil string larger than 4¾-inch in size. When wells were being flowed through 4¾-inch casing they had a comparable decline to those flowed through 2½-inch and 3-inch tubing.

Because of town lot development in the Long Beach field it is extremely difficult to prevent rapid declines and interference due to extreme drainage created by the drilling of too many wells.

At the time the Richfield started its system of regulation a number of engineers predicted it would be folly to try back-pressure regulation, because of the town lot development, but the nature of the oil sands themselves demonstrated it was possible to effect systematic results.

It was also found by keeping records that untubed wells have the highest initial production but, as here-

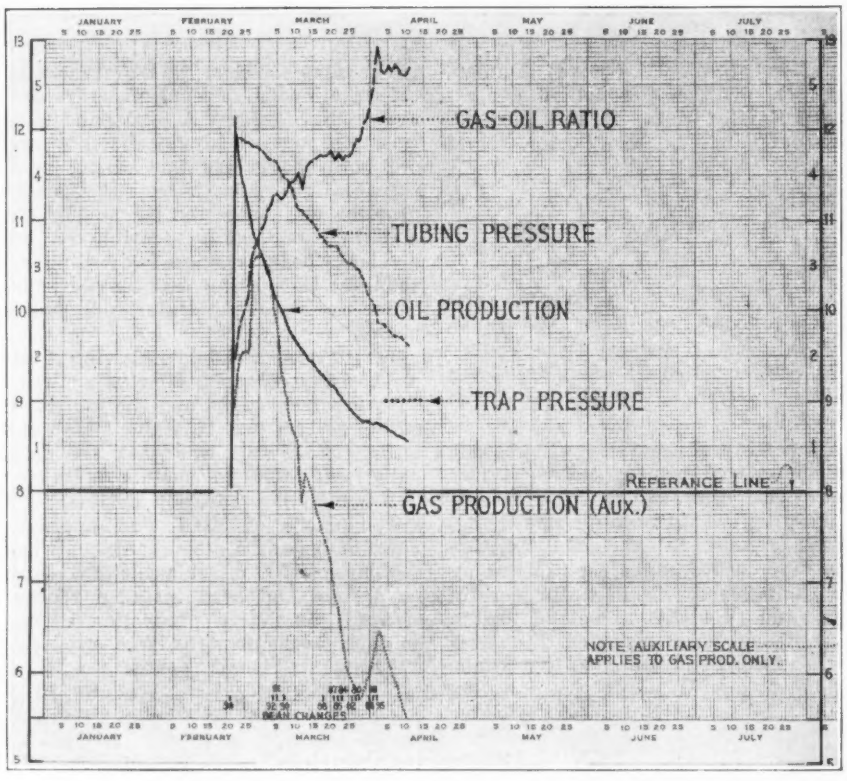


Chart on a typical deep zone well in Santa Fe Springs. Side scales as in chart No. 1 represent thousands of barrels of oil, hundreds of pounds of pressure and millions of cubic feet of gas; the gas/oil ratios are shown in thousands of cubic feet per barrel. This curve shows "bean" changing was effective in reducing gas production but reacted inversely on oil production, due mainly to the fact offset wells were being flowed wide open without "beans." Note that late in March "bean" changes did have the effect of flattening the decline

in cited, will be surpassed in cumulative yields within a few months by those flowed through tubing. However, if systematic regulation is begun within a few days after the bringing-in of an untubed well it is possible to create an efficient regulation of its decline.

If regulation is not started within 60 to 90 days, it was found, the volume of gas surrounding the well will be so greatly reduced in pressure that it is impossible to regain efficiency once it is dissipated.

General conclusions worked out from consistent study of wells in the Long Beach field were:

(1)—That the "beaning" back of both tubed and untubed wells should be instituted in the early life of the well, thereby facilitating its control; making it easier to bring the well into a normal decline.

(2)—That each well is a problem unto itself and should be so taken; that generalities of principle are derived only from a study of many wells.

(3)—That back pressure regulation in the Long Beach field was possible due to the fact that apparently no damage was done to wells in which effective back pressure was being held mainly because of the nature of the producing sands themselves.

(4)—It was found possible to "bean in" 250,000 to 300,000 cubic feet of gas daily in the average "deep zone well" in the Long Beach field, which the Richfield has done in most instances in connection with its flowing wells. Another example was the case of a well making 1,000,000 cubic feet daily, which the Richfield "beaned-in" in three weeks' time by careful handling.

(5)—Back pressure regulation should be continued only by careful work and in no instance should the flowing well be subjected to erratic changing of "beans" from large to small and back again; but the work should be done in a consistent "beaning back" of not more than 2/64-inch in diameter daily until the well has been brought under control.

Richfield curves have also demonstrated that the effects of "beaning in" a well, even at 1/64-inch a day, is not definitely felt until some eight to 12 hours after the "bean" change has been put in effect.

It was strongly recommended by the Richfield engineers that those trying to conserve gas at the well and promote efficiency of production make no erratic change but do all "beaning" in a consistent and gradual manner.

In connection with the Richfield's work at Santa Fe Springs similar mechanical equipment and curves were used as in the case of Long Beach. It was found that the excessive gas pressure and volumes at Santa Fe Springs created new problems.

For example, the average individual well completed in the Buckbee oil producing zone (recently discovered below the Meyer), showed a pressure of 1000 pounds to the square inch on the casing and from 200 to 450 pounds on the tubing (depending on bean size) and the gas volume ranged from 4,000,000 to 12,000,000 cubic feet per well daily as compared with the average well in Long Beach of 2,000,000 to 3,000,000 cubic feet.

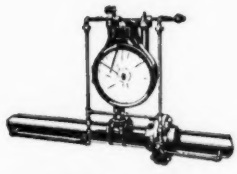
For comparison, the Long Beach pressures range on an average from 850 to 900 pounds on the casing and from 160 to 250 pounds on the tubing.

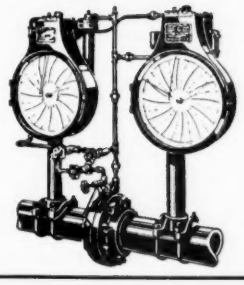
It was again demonstrated at Santa Fe Springs that each field and well is a problem unto itself. There, the prevailing idea of the operators was to open the wells up regardless of "bean" sizes and get the oil while "the getting was good."

That such a program was not carried out at Long Beach was perhaps due to the fact that the initial op-

METERS

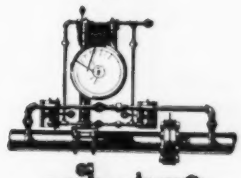
The Seal of Accuracy

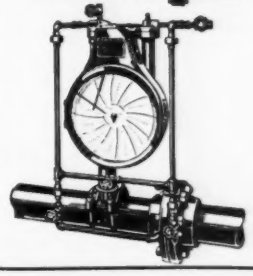




When you remove the chart from a Metric Orifice Meter you have a record upon the accuracy of which you can rely. The Metric Orifice attained the distinction of being the most accurate and dependable apparatus for the measurement of gases and liquids flowing in pipe lines soon after we introduced this type of meter thirteen years ago. And it has maintained this distinction ever since, despite the designing and manufacturing of many other velocity meters of simple and complicated form. Since its inception no other meter intended for similar service has obtained any advantage over the pioneer Metric ORIFICE, *except at the expense of those most fundamental qualities — accuracy and dependability.* In these most desirable characteristics, these meters carry all honors.

Sales Service: Westcott & Greis, Inc., Dallas, Tulsa, Los Angeles





METRIC METAL WORKS

of the American Meter Company, Inc.

ERIE · PENNSYLVANIA · U·S·A·

MELRATH GASKETS

THE HIGH PRESSURE THEY CAN WITHSTAND

would make Melrath Gaskets a wise purchase, even if they did cost more than the ordinary gasket. Carefully made, of the finest material, their long span of life more than justifies the enviable position they occupy in the minds of many plant executives.

Send us drawings or samples of your gasket requirements — we shall be glad to estimate. No obligation of course.

Makers of Quality Gaskets Since 1909

MELRATH SUPPLY & GASKET CO., INC.

613-615-617 Wood Street

Philadelphia, Pa.

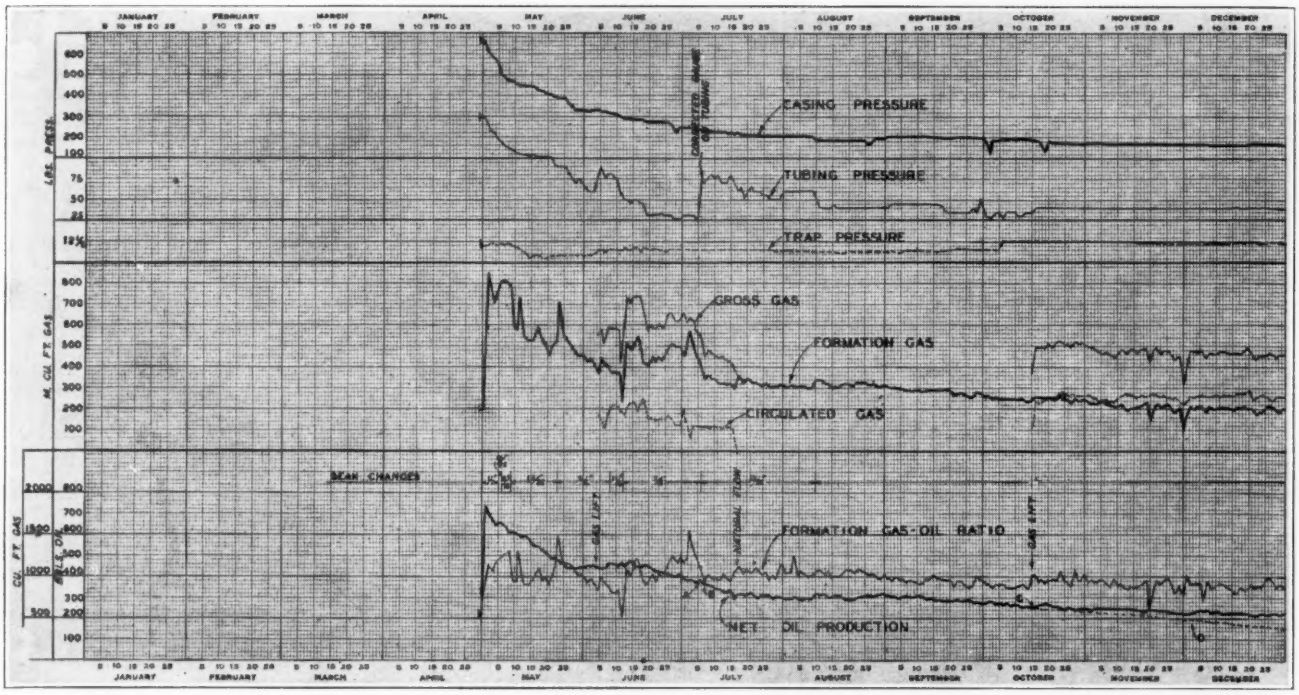


Chart on typical well in the Rincon field in California. Note that gas lift was effective in sustaining production without apparent loss over the flowing stage of the typical producing well

erators in the field were the larger companies who instituted the practice of flowing wells against back pressure.

In the case of back pressure regulation on Santa Fe Springs wells it was found that a great deal of good could be accomplished in the conserving of gas as shown by the Richfield's records. That company found it possible within two weeks' time to reduce wells producing 7,000,000 and 8,000,000 cubic feet of gas daily to 4,500,000 cubic feet daily by proper "beaning."

A new problem that had to be met was the handling of the large volumes of gas at Santa Fe Springs to prevent its being "popped" to the air. The Richfield's gas department found that existing gas trap equipment was not adequate to meet the situation.

Investigation showed that the ordinary trap used at the well was not getting all of the gas; in fact, the trap capacity usually was so small that most of the gas volume was having to be by-passed into the air.

The problem was handled by installing two high pressure traps on the ground, capable of withstanding 300 pounds pressure, and operated in conjunction with a low pressure trap on an elevated platform.

High pressure traps are operated at as high pressure as may be necessary to handle the oil and gas produced.

The system was worked out to cope with the repressuring scheme which was being considered for handling excess gas from the Buckeye zone to the then nearly depleted Meyer zone, it being thought that this pressure could be delivered direct from the high pressure traps to the compressor on the injection wells. This type of hook-up was new in the field and had been used only by one or two companies in California.

It was proved so successful that most of the major companies on the Pacific Coast are beginning to use it in high pressure areas. In explanation of the recovery efficiency found by use of this type installation, the following figures are cited: One well produced 6,450,000 cubic feet daily through a high pressure trap and 127,000 cubic feet through the low pressure trap, showing natural gasoline recovery of 1.5 gallons on the first mentioned and 8.2 gallons on the other (low pressure) trap.

A disastrous feature at Santa Fe Springs was the holding of too high back-pressures on both trap and wells, these being on the high pressure outlet lines. Upon investigation it was found possible to increase the wells from 200 to 300 barrels daily when the back pressures were properly regulated.

The concentrated town-lot development on the apex of the Santa Fe Springs structure prohibited the efficient control of wells in the Buckbee zone. The majority of these wells stopped flowing after having produced an average of 160,000 to 200,000 barrels cumulative.

In the Rincon development, the Richfield and its subsidiary Pan American Petroleum Co., together with other operating interests, experienced much difficulty in the production of oil in the upper horizons because of rapid declines and the tendency of wells to sand. The difficulty was finally overcome by back pressure regulation in connection with gas lift.

Inasmuch as the original rock pressure is probably about 1300 pounds per square inch, and because the oil was only slightly warm, about 72 F., together with the fact that wells declined quickly to about 100 barrels daily, made gas lift operations fairly difficult.

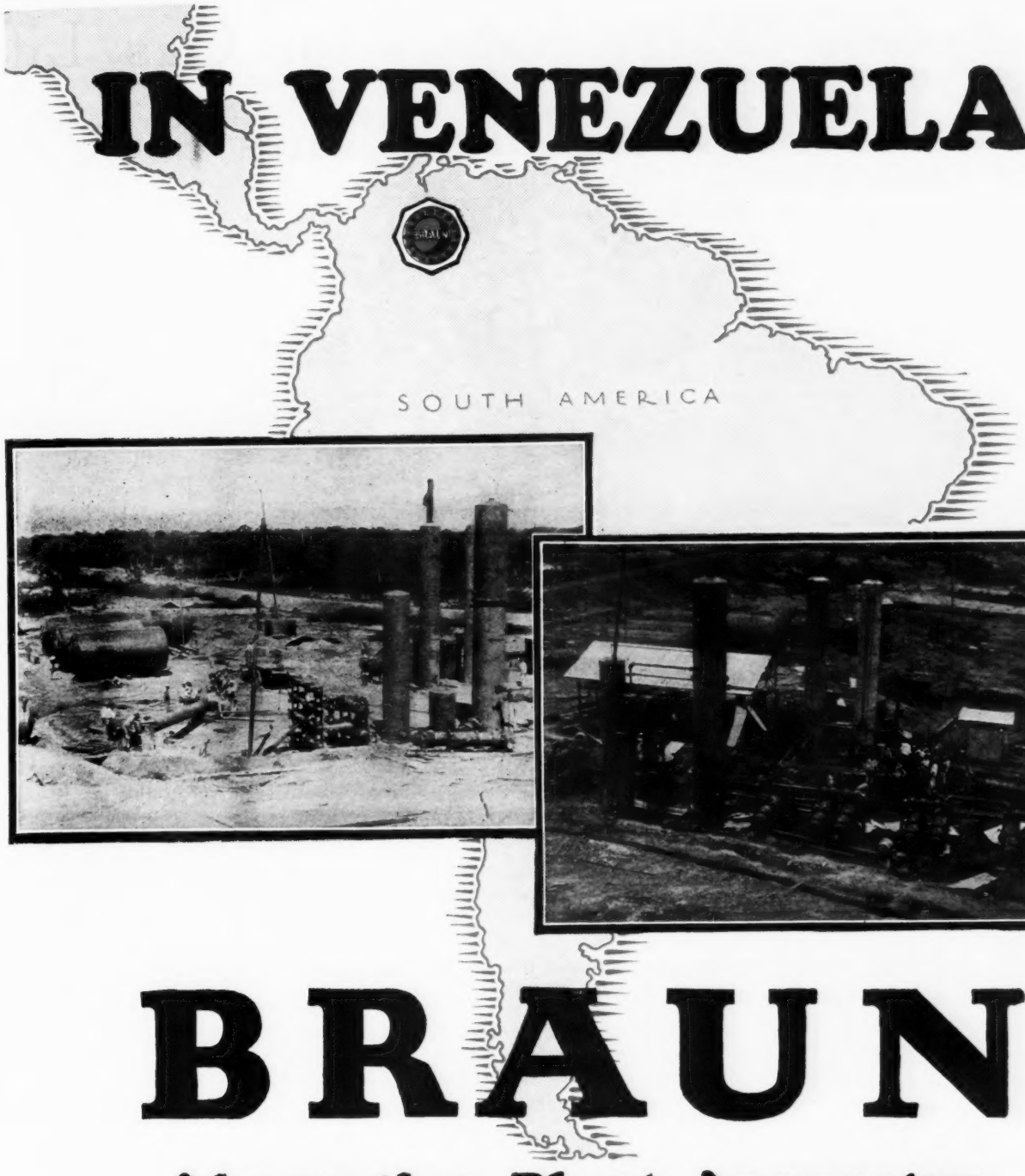
Pressure gages were installed and accurate records kept, as at Long Beach and Santa Fe Springs. By observing the wells closely and studying the casing pressure decline rate, and cut in water, the proper time was found to put on gas lift.

In using the gas lift, the wells were also prevented from "going dead" or sanding and by holding proper gas pressures it was possible to eliminate sand trouble almost altogether.

The oil sand in the Rincon region has a tendency to run freely into the well once the casing pressure has been brought down to 50 or 60 pounds per square inch.

By the use of compressor work and proper analysis of the curves it was found possible to maintain wells on production for a period of many months without showing anything but a few barrels decline per day.

IN VENEZUELA



BRAUN

Absorption Plant Apparatus

is again selected for its suitability to foreign service where [a] Flexibility of operation, [b] Low cost of maintenance, [c] Stability of product, are all so essential.

C·F·BRAUN & CO.

Manufacturing Mechanical Engineers

ALHAMBRA, CALIFORNIA

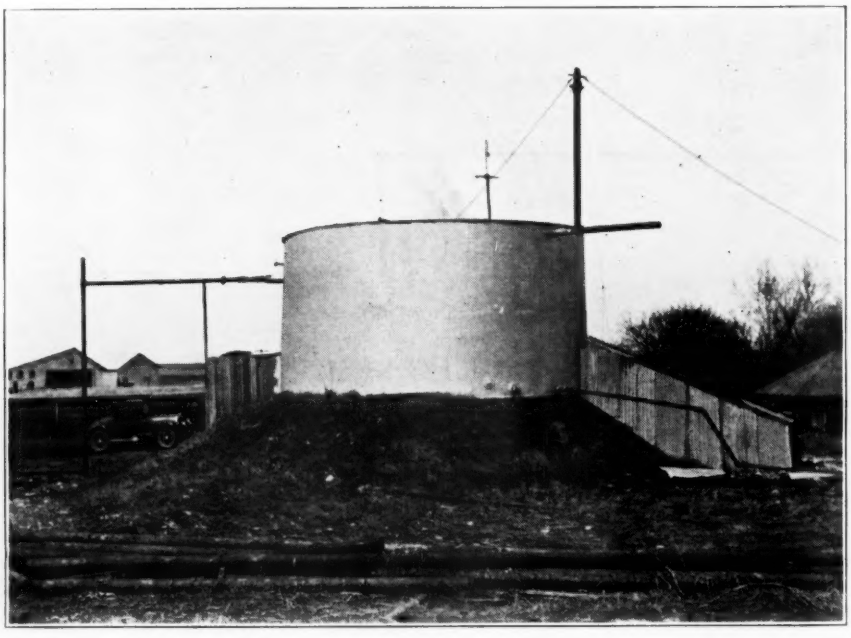
TULSA Kennedy Bldg. **DALLAS** Republic Bank Bldg. **HOUSTON** Neils Esperson Bldg. **CHICAGO** Engineering Bldg. **NEW YORK** 120 Broadway

Automatic Water Supply for Gas Lift And Gasoline Plants

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA

A WATER supply system, wholly automatic, economical of operation, has been in use at the big compressor plant of the Delaware Consolidated Oil Corp., in the Nowata district, Oklahoma. The plant is employed in repressuring.



Storage tank on mound. The camera caught one of the heads of water surging above the tank

Prior to installation of the new system, water had been lifted from the creek near the plant to storage tank by means of a familiar type of displacement pump, which depended upon floats to "kick off" the air pressure when the water in the chamber of the lift rose to a certain level. While these operated effectively, they were quite wasteful of air. The greater part of the output of one compressor was required to keep the system going.

The method that has been devised by Dunn & Lewis, consulting engineers, who manage the Delaware Consolidated company, employs a modified form of the Harris air lift, combined with a patented regulating device. The Harris air lift is a method for flowing water from wells, consisting of a specially constructed head at the bottom of the air pipe and is supposed to use less air than does the ordinary straight pipe. In practice it is common to use straight pipe submerged two-thirds below the water level—for a lift of 100 feet, the submergence would be 150 feet.

For the new system of supplying cooling water to engines in the Delaware Consolidated plant a 24-inch well was drilled on the bank of the creek to depth of 125 feet below the surface of the water. Sixteen-inch junk pipe was used as a form in the well and the annular space between the pipe and the wall of the hole filled with concrete. Thus, if the pipe finally gives way, the walls of the hole will still be firm. A concrete conduit five feet square was built from the creek to the well, this being below the surface of the water so that in summer when the creek water is low, it will still be high enough to filter through the conduit.

An eight-inch line is used to discharge the water from the well to a 500-barrel tank located on an artificial mound high enough to give the pressure required to force the circulating water through the engines. The lift from well to tank is 55 feet. Two lines lead from the supply tank to the machinery, one 4-inch line leading to the cooling coils and a 6-inch carrying water for cooling the compressors and power cylinders. Water is lifted from the well to the tank through an 8-inch line. This enters the side of the supply tank and discharges the water at about the center of the tank.

Now as to how it works. A 2-inch line carries the air supply from compressors into the well, its lifting force being augmented inside the 8-inch line by a booster hole which aerates the water and makes for a low pressure "kick off" if the plant is shut down.

Bolted inside the 500-barrel water supply tank is an inverted tank, or bucket one foot in diameter by three feet deep. The bottom of this as it is in place is open and the tank is located at the point where it is desired to carry the water level in the large tank. In operation, the water level never falls below the open end of the inverted tank, hence a closed circuit is maintained from it to the regulators on the air supply line to the well.

Running from this inverted tank to the regulator is a three-fourths-inch line set to work against the top of the diaphragm of the regulator. When the water level rises in the big tank, it rises also in the small tank and increases the air pressure in the small line. This in turn depresses the diaphragm, partially shutting off the air supply to the well, as the ordinary regulator acts when the pressure increases on the low-pressure side of the regulator.

When the water level falls in the big tank, the pressure on the air in the small inverted tank decreases and the lessening of pressure is carried to the space above the diaphragm, causing the weight on the regulator lever to drop and open the valve, admitting more air to the water well. This operation goes on 24 hours a day, turning on air and shutting it off.

There is never a positive shut-off, although there could be, and there is

always some air going to the well and some water flowing into the tank. What really happens, then, is a partial shut-off on the air line and a heading-up in the well and in the horizontal line to the tank, causing surges of water from time to time. Such surges, with the plant in full operation, are but a few seconds apart.

The variation in the water level of the storage tank does not exceed three inches. The plant requires about 15,000 barrels each 24 hours, yet, since last August, the system has worked perfectly and the tank has neither been empty nor overflowed, although the plant has been partially or completely shut down several times.

The low pressure air for flowing is taken from the low cylinders of three units in the compressor plant—the machinery having originally been designed with an excess of low stage capacity and the excess air formerly used to operate the automatic displacement pumps. The air is passed into the supply line to the well through a check valve.

In case the three units shut down, there is a high-pressure regulator set to feed in one pound below the present pressure carried on the low pressure regulator and the high pressure air or gas would feed in from the main lines. Thus, the units in the plant still in operation would not be endangered from lack of water if they continued to run. It is apparent, of course, that one or both of the lines leading from the 500-barrel tank to the machinery may be shut-off and the tank will not overflow, as the amount flowed from the well is dependent wholly upon the withdrawal of water from the tank.

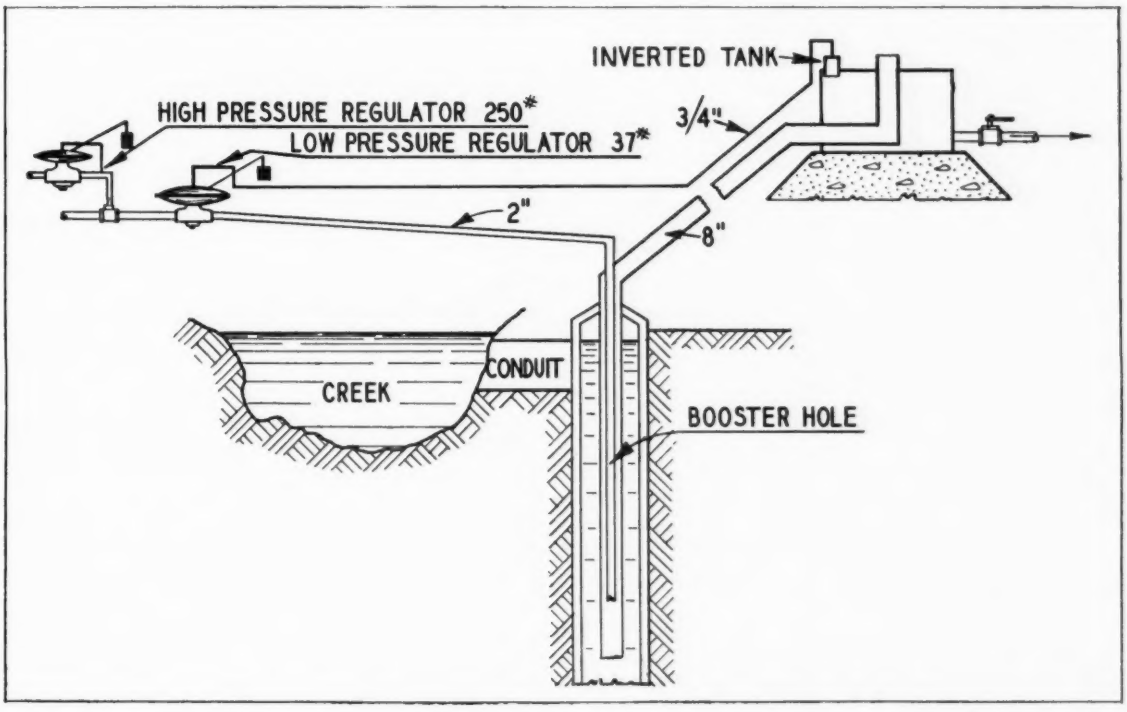
The water well alongside the creek. The stream is return water from the compressors. The air line is inside the pipe which carries the water. This method was used during cold weather to keep the air line from freezing

The phase of the method that is covered by patent by Messrs. Dunn and Lewis is the use of the inverted tank, connected to the regulators.

The system is applicable to gasoline plants. The well does not have to be drilled at the supply pond or creek, but in the case of gasoline plants can be located at the end of a cooling tower. Expanded gases used to lift the water can be used for power purposes in the engines, doing away with auxiliary machinery. For such use, a trap consisting of a tight cylinder would be suspended immovably above the end of the 8-inch water pipe from the well.

The pipe would enter the tank as a riser inside and to above the water level. The trap would fit over this, its bottom end being open and extending far enough below the water level so that no gas would escape and high enough so the gas would have room to separate readily. A line from the top end of the trap would conduct the gas to the power cylinder.

The system has not been used at a gasoline plant, but experiments made at the Delaware Consolidated plant show that gas can be used for lifting the water without loss.



Plan of water supply system at Delaware Consolidated plant

Reduces Shaft Friction 90%!!

Not only does the Cooke Seal Ring create a leak proof seal around any revolving shaft, but it practically does away with shaft friction in the stuffing box. There is no packing to bind the shaft, score it, overload the motor, waste power. Instead, the ground surface of the Cooke Seal Ring, frictionally tight *on* the shaft — and running in a bath of oil or water, revolves smoothly against the gland with an absolute minimum of friction. One of a dozen reasons why Cooke Seal Rings are being installed everywhere on pumps, compressors, swivel joints, drills, etc. Write us for details.

COOKE Seal Ring

42 N. Green Street,
Chicago, Illinois—Dept. M

"Oil Land Development and Valuation"

by R. P. McLaughlin

Petroleum Engineer and Geologist, formerly State Oil and Gas Supervisor of California.

It Tells you:
- How to locate and space oil wells properly;
- Methods of drilling wells;
- How to test wells;
- How to gauge output of wells;
- How to use production reports;
- How to repair wells;
- How to deepen wells;
- Rules for abandonment of wells;
- Methods of shooting wells;
- How to evaluate oil wells;
- Examples of repair work at oil wells;
- Examples of efficient development of a new field.

200 pages, pocket size, flexible, 59 illustrations $3.00. Check with order.

For sale by

National Petroleum News
1213 West 3rd St.
Cleveland, Ohio

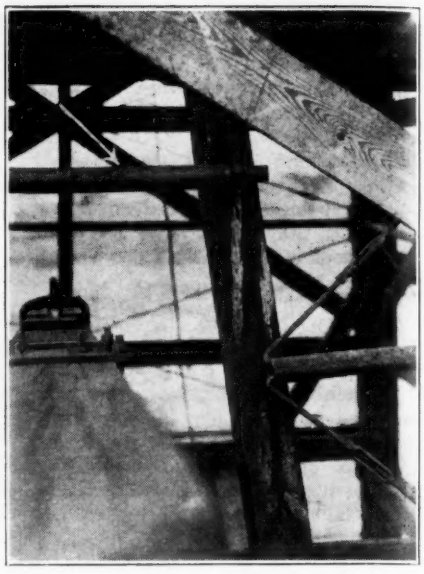
Home Made Roller Bearing Stops Rod Kinking

EARLBORO

A SIMPLE roller bearing device installed on some of the Barnsdall Oil Co.'s deep pumping wells in the Earlsboro district of Seminole is a great aid in keeping the rods from being kinked. The rods run against the bearing as they are being "tailed out" when coming out of the hole, and also when being pulled into the derrick as they are being run back into the hole.

The bearing consists of a piece of two-inch pipe through which a slightly longer piece of inch and a half pipe has been run. The smaller piece of pipe is bolted to the derrick girts in such a manner that the two-inch pipe rotates freely around it.

Rods under the strain to which the rods in a 4000-foot pumping well undoubtedly are put will break at the slightest excuse, the most frequent cause being some slight kink in the rod itself, caused by careless or improper handling when pulling the well. Some of these kinks which cause rod breaks may be too small to be readily detected, with the result that a faulty rod is often run back into the hole. In order to insure better treatment of the rods without delaying the rod pulling jobs unduly, the Barnsdall has tried cutting out part of one of the girts to raise the top of the "A" still higher from the floor. This means that when the rods are tailed out or pulled back into the derrick that they are in less of a bind than would ordinarily be the case. The bearing which has been described is placed at the top of the "A," and helps to keep the rod running smoothly regardless of the speed of the pulling crew.



The bearing, marked by arrow, against which sucker rods run when they are being pulled from or run into the hole. The "A" in the derrick is raised to keep as much bind as possible off the rods. Picture taken from on top of the walking beam

This method of keeping the sucker rods out of unnecessary binds has caused a noticeable decrease in the down time on the wells on which it has been installed due to broken rods.

Rattlesnake Discovery Renews Interest in NW New Mexico

TULSA

NEW interest in the northwest New Mexico country is caused by the strike of the Continental Oil Co. on Rattlesnake dome, San Juan county. Forty gravity oil was developed at 6770 feet in a Pennsylvanian sand.

The field, which has been producing for several years from the Dakota sandstone at depths ranging from 700 to 900 feet, is one of the freaks of oildom. The peculiarities of the oil found in this horizon were described in the February, 1929, Bulletin of the American Association of Petroleum Geologists by Kenneth B. Nowels, of the U. S. Bureau of Mines, Laramie, Wyo., station. He said:

" . . . In July, 1927, while some production tests were being made in the field, a sample of fresh oil from well No. 21 was drained from the oil-gas separator, which was under pressure of 10 pounds, and a gravity reading was taken with a hydrometer.

"Although the atmospheric temperature at the time was about 80 degrees F., the oil sample had a temperature

of 32 degrees F. and was boiling. At this temperature, the A. P. I. gravity was 69.5 degrees. After corrections had been made for a temperature of 60 degrees F., the gravity was approximately 73.4 degrees. In another test during March, 1928, a sample from well No. 22 taken directly from the casinghead had a gravity of 70.2 degrees A. P. I. at 35 degrees F., or of 73.7 degrees A. P. I. at 60 degrees F. The oil as it comes from the wells is light amber in color and has the appearance of apple-cider vinegar. . .

"Aluminum painted vapor-proof receiving tanks are used throughout the field, but even in these containers there is an unavoidable loss of unstable volatile fractions from the oil. The flow lines, oil-gas separators, and tanks up to the height of the contained oil are always covered with frost and moisture, even in the summer time.

"To gage the amount of Rattlesnake crude in a tank by means of the ordinary wooden gage pole is almost impossible, especially if the oil is fresh from the well. When the pole (which is ordinarily of atmospheric temperature) is lowered into the tank, the entire tank of oil starts to boil. The surface of the fluid is in such violent motion that an accurate gage reading cannot be made. In order to use a gage pole satisfactorily in fresh oil, it is necessary to leave it immersed in the tank until thoroughly chilled.

"Most of the tank gaging is done with steel tape and plumb-bob, as there is less body to the tape and it chills quickly. A piece of chalk or clod of dirt must be used to dust the tape approximately where the oil surface in the tank will strike it, in order that a clear reading may be secured. The oil is so light and of such low viscosity that it will not leave a mark without the use of chalk or dirt.

"In summer the fresh oil in a tank is in constant agitation because the atmospheric temperature throughout a 24-hour period is ordinarily higher than the initial boiling point of the fresh oil."

The Edward Valve & Manufacturing Co., East Chicago, Ind., manufacturers of power plant and refinery valves, are now represented in Baltimore, Md., by D. C. Elphinstone, Inc., 120 S. Calvert street.

Reading Iron Co., Reading, Pa., elected at its recent annual meeting L. E. Thomas, president; John M. Callen, P. N. Guthrie, Jr., and R. J. Wenger, vice presidents; George W. Delany, secretary and Henry N. Yost, treasurer. Mr. Thomas is also president of the Thomas Iron Co., Mr. Callen is vice president; Mr. Delany secretary and Mr. Yost, treasurer.

New Operating Methods

Nine articles per month in National Petroleum News, an average of two per issue, have discussed new operating methods and solutions to problems facing operators in the oil fields.

What they are doing to cut costs, new methods and ingenious devices for more efficient work, and other features, are included.

Here are 75 that have appeared since last July for your file reference:

1929

Oil field emulsions — April 17, p. 59; March 27, p. 51
How to keep holes straight — April 10, p. 63
Kansas experiments with rotary successful — April 3, p. 63
A. P. I. studies crooked holes — April 3, p. 29
Wells drilled straight slowly reach sand faster — April 3, p. 51
Large savings from low-pressure separation of gas oil — March 20, p. 200
Oil well reclaimed with home-made mudding outfit — March 20, p. 212
Individual well record keeps leases profitable — March 13, p. 59
Alcohol keeps gas lift lines open — March 13, p. 66
Perfects method for breaking out air-lift wells — March 6, p. 64
Automatic features on lease save money — Feb. 20, p. 50
Cheaper lifting, better recovery sought in repressuring — Feb. 13, p. 34
Operators to pay $50,000 for water disposal — Feb. 13, p. 68
Method for surveying hole deviation — Feb. 13, p. 59
Cuts expense by removing mud from water — Feb. 6, p. 55
Economics of pipe line pumping — Feb. 6, p. 54
Pulsing air-gas cuts repressuring hazards — Jan. 30, p. 60
Engineering makes faster drilling in Seminole — Jan. 9, p. 62
Discusses drilling improvements — Jan. 9. p. 67
Repressure equipment cost returned quickly by lease — Jan. 2, p. 29
Barrel pumps save oil at drilling wells — Jan. 2, p. 52
Generates own power in Little River — Jan. 2, p. 52
Shale carrier removes heavy cuttings from rotary mud — Jan. 2, p. 51

1928

Questions economic success of gas lift — Dec. 12, p. 60
Finds "buttons" keep tubing free of paraffin — Dec. 12, p. 55
Oil and water separator used in fields (photo) — Dec. 12, p. 41
Uses rough baffles to gather oil film — Dec. 12, p. 52
Pump cutting agent breaks emulsion — Dec. 12, p. 58
"Soil stress" causes pipe line coating failure — Dec. 12, p. 28
Large-diameter wells yield most oil — Dec. 12, p.43
Electric motors drill Kansas wildcats — Dec. 5, p. 92
Water station avoids delays — Nov. 21, p. 64
Weight indicators on drilling wells prevent grief — Nov. 21, p. 54
Crooked holes caused by too much speed — Nov. 14, p. 30
Injects heated gas to vaporize oil — Nov. 14, p. 35
Residue from welder generator reconditions pipe line — Nov. 14, p. 58
Correct mixing of concrete for oil field use — Nov. 7, p. 32
Combination pump and flowing device solves rod troubles — Nov. 7, p. 37
Measuring conditions at bottom of hole — Oct. 31, p. 59
More West Texas properties electrified — Oct. 24, p. 36
High silica content material used in pipe line — Oct. 24, p. 39
New equipment permits running tubes in high pressure wells — Oct. 24, p. 56
Aerial mapping used in laying pipe line — Oct. 17, p.42
Electrical dehydration of oil in Comodoro Rivadavia — Oct. 17, p. 119
More efficiency from testing the mud in rotary drilling — Oct. 17, p. 47
Automatic oil well pump successful for small wells — Oct. 17, p. 52
Recording, control instruments essential in producing — Oct. 17, p. 155
Many factors affect compressor efficiency — Oct. 17, p. 171
Thoro mixture needed for efficient engine operation — Oct. 17, p. 173
Diesel engine is prime mover in oil fields — Oct. 10, p. 60
Tunnels to stop oil well fire — Oct. 10, p. 42
"Time clutch" used for pumping wells — Oct. 10, p. 60
New packer for air intake in wells — Oct. 10, p. 34
Gyroscopic method of prospecting in Mexico — Oct. 3, p. 75
Types of portable pulling and cleaning equipment — Sept. 19, p. 49
Special well hook-ups designed for Winkler — Sept. 12, p. 44
Cleans equipment in "Oakite vat" — Sept. 12, p. 53
Portable emergency pumps for pipe lines — Sept. 12, p. 54
Gate valve control protects workers — Sept. 5, p. 58
Electricity cuts costsof pipe line — Aug. 29, p. 23
Compressor runs on recycled air — Aug. 22, p. 38
Thermic syphon in oil field boilers improves circulation — Aug. 22, p. 47
Multiple pumping of oil wells — Aug. 22, p. 51; Aug. 1, p. 47
Avoids extra costs in pressure rejuvenation — Aug. 15, p. 51; Aug. 1, p. 25
"Do's" and "Dont's" in rod pulling — Aug. 15, p. 47
Ingenious tractor hook-up cleans wells cheaply — July 25, p. 33
Effect of operating methods on oil recoverable — July 25, p. 50
Soft water cuts repair costs — July 18, p. 33
Power pumping cuts costs on Kansas lease — July 11, p. 99
Core testing with cable tools in Kane, Pa. — July 4, p. 50
Electric heater removes paraffin deposits — July 4, p. 80

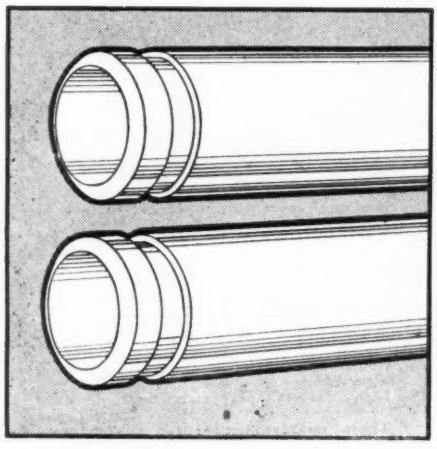
Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News

Main Office: 1213 West Third St. — ***Cleveland, Ohio***

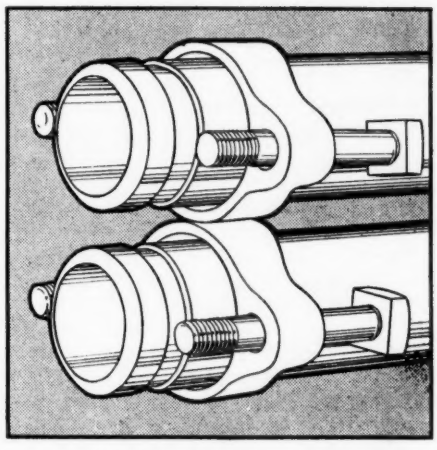
SECO
RETURN BENDS

Quickly Installed or Removed

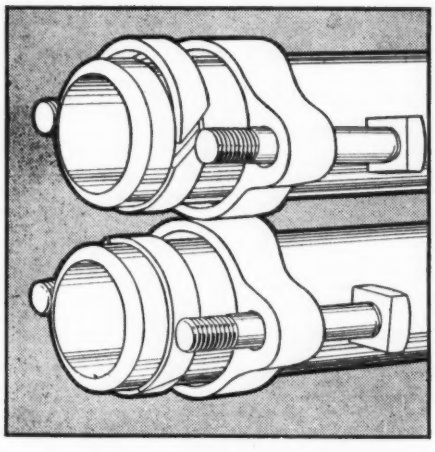


1. A pair of tubes to be connected.

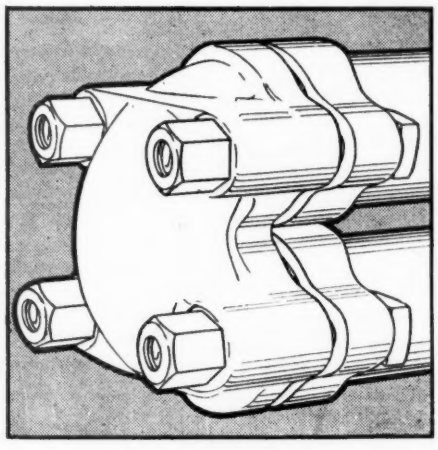
Seco Return Bends are locked in place by simply tightening four nuts. And they can be removed just as quickly. Hence, they afford a saving in installation costs, as well as time off stream when tube replacement is necessary.



2. Followers slipped over the tube ends.



3. Split keys snapped into the grooves.



4. Return bend bolted in place.

Perfect stream-line construction effects material savings in pump steam, so that in operating costs, Seco Return Bends pay daily dividends.

These and five other important advantages make Seco Return Bends the most satisfactory fittings for you to use. Complete information on request without obligation.

Smith Engineering Company
109 West Linwood Blvd.,
Kansas City, Mo.

Dodge Steel Company
6501 Tacony St.,
Philadelphia, Pa.

For All Pipe Stills

SECO RETURN BENDS

Control Gasoline and Fuel Oil Quality In Cokeless Cracking Process

By Paul Truesdell
N. P. N. STAFF WRITER

NO COKE, extreme flexibility, low construction, fuel and maintenance costs are the salient features claimed for a new cracking process that is operating at the refinery of the Gulf Refining Co. at Bayonne, N. J.

It can handle any type of charge stock, from kerosene distillate and light gas oil to Mexican or Venezuelan crude or reduced crudes. The degree of cracking may be varied over a wide range or its operation confined to distillation or viscosity treating.

The plant may be run to make products commonly attributed to vapor phase cracking or those pertaining to the liquid phase range or, in fact, any intermediate condition desired. It has been designed particularly for the manufacture of anti-knock distillates and is being operated on this basis at the present time. The flexibility of its operation multiplies its utility resulting in many interesting features.

First, not only can any kind of charging stock be used, but products of widely varying characteristics can be made at will.

Second, both the quality and characteristics of the gasoline stream taken overhead can be controlled; likewise the quality of the fuel oil which is the sole other product made in the process.

Third, these changes can be effected immediately simply by varying temperatures and pressures.

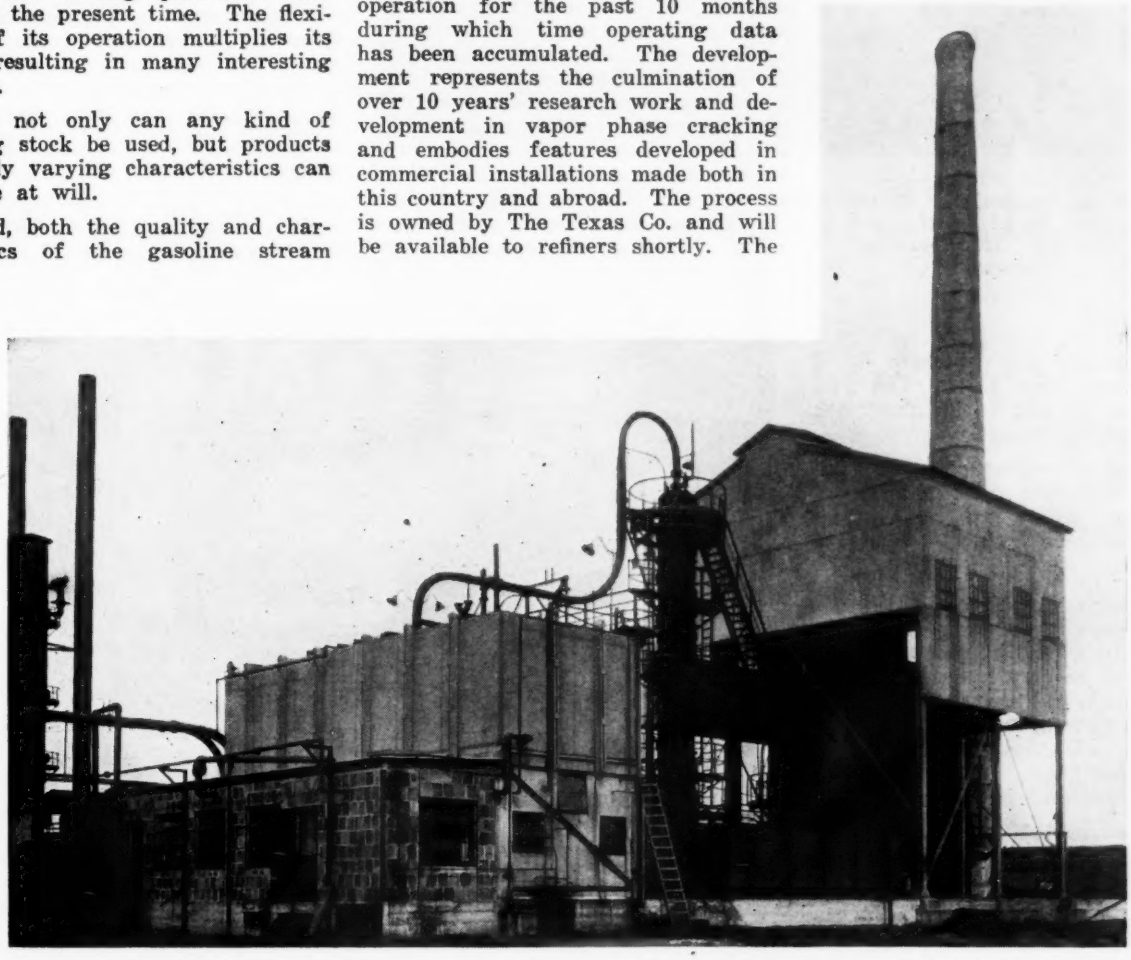
As to the cokeless feature, the writer was informed that at the completion of 400 continuous hours operation on Venezuela crude an inspection of the plant showed no deposit of carbon in any part of the system which would indicate unusually high operating time on heavy charging stocks. At the time of the writer's visit the duration of the run to date was over 350 hours.

The de Florez process, as described here, has been developed by Luis de Florez, over a period of the last two years. It has been in continuous operation for the past 10 months during which time operating data has been accumulated. The development represents the culmination of over 10 years' research work and development in vapor phase cracking and embodies features developed in commercial installations made both in this country and abroad. The process is owned by The Texas Co. and will be available to refiners shortly. The process will be sold and constructed by the M. W. Kellogg Co.

The plant differs considerably in equipment, design and construction from other cracking plants with which the refining industry is familiar.

It consists primarily of a heater, an economizer, a heat exchanger, a bubble tower, an accumulator tank, a compressor and the necessary pumps, condensers, coolers, tankage and so on.

The heater is a circular, vertical pipe still, the tubes of which are arranged vertically around the inside wall, their ends connected with return bends to make a continuous coil.



The de Florez cracking unit at Bayonne. In the foreground, condenser box, to the right of it the bubble tower, to the right of that the circular, vertical tube still or heater, invented by Mr. de Florez

The gas burner which heats the oil is supported at the top of the heater so that the flame shoots downward.*

High flame temperatures are obtained and about 72 per cent efficiency is claimed for the heater, together with very low maintenance cost because the tubes are equidistant from the fire and hence are heated uniformly by radiant heat. No excess air is used and flue gas recirculation is not resorted to to dilute the flames. There is no danger of the flame impinging on the tubes because it is too far away from them. The fuel consumption is said to be about 5½ per cent of the charge.

The gases of combustion pass downward through the heater and out through a throat at the bottom through an economizer and thence to the stack.

The charging stock on which the plant is operating now is Venezuelan crude of 18-20 A.P.I. gravity, which has such a boiling range that only from 4 to 8½ per cent is evaporated at 392 F. From this crude, the average yield is about 30 per cent of pressure distillates, 63 per cent fuel oil and 7 per cent fixed gas.

The pressure distillate has an average gravity of 54.2 A.P.I., an initial of about 100 F., 28 per cent off at 221 F., 54 per cent off at 284 F., end point 384 F. to 392. This compares with the U. S. Motor specifications of 131 F., initial, 221 F. 20 per cent point, 284 F., 50 per cent point, 392 F., 90 per cent point and 437 F. end point.

The anti-knock value of the finished gasoline from this process is such that blending it one-third to one-half with straight run refinery gasoline is said to give a fuel equal to the standard set by the Ethyl Gasoline Corp. This product is now being treated with sulfuric acid and several alternative methods are under consideration. It is stated that the current method does not entail undue loss either of product or of anti-knock value.

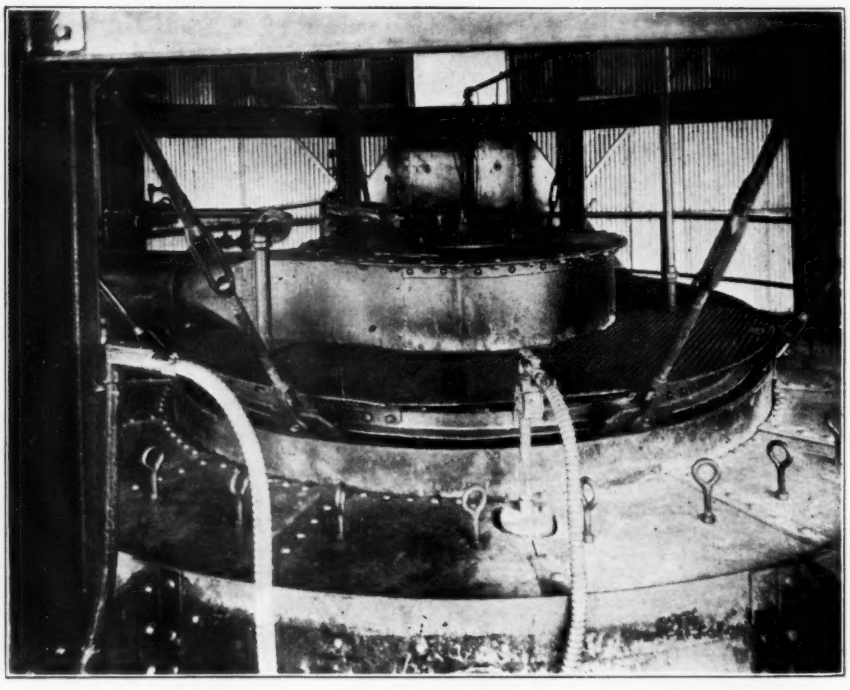
The fuel oil from the process as operating at present meets Bunker C specifications and it finds a ready market.

The pressure under which the bubble tower is operated is said to be the governing factor in determining the nature of the products made. At present the tower is operated at about 80 pounds pressure with the pressure at the inlet of the heater about 330 pounds. Average operating temperature is from 1000 to 1100 F.

In some of the earlier experiments, runs were made at lower pressures, of the order of 20 pounds on the tower. Such a pressure gave smaller yields of gasoline and larger yields of fuel oil for a given percentage of gas. It has been found that the anti-knock value of the gasoline can be bettered by increasing the temperature and the pressure on the bubble tower. The increase of anti-knock values is usually attended by some increase of fixed gas and the extent to which this should be carried is governed by economic conditions.

The manner in which the crude is skimmed in this system is interesting. Instead of being circulated through pancake coils in the top of the tower, it is passed through a

Indicating and controlling apparatus on the central board in the control house of the De Florez process at Bayonne



Top of the de Florez circular still. The burner, a mechanically atomizing device, is in the center with the flames shooting downward. The return bends that connect the ends of the tubes are under the steel plates from which the eyebolts stand up. In the foreground, pyrometer installations are seen. The unit is clearly controlled as to temperature and pressure

*This still was described in NATIONAL PETROLEUM NEWS, April 24, page 75.

If some stockholders knew what some refinery operating officials know, there would be only one cracking process used — the one which operates on fuel oil and produces no fuel oil for sale

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

The EDELEANU Process

for

Refining with Liquid SO_2

NO loss of distillate

NO production sludge acid

NO plant corrosion

NO loss of SO_2

Yielding

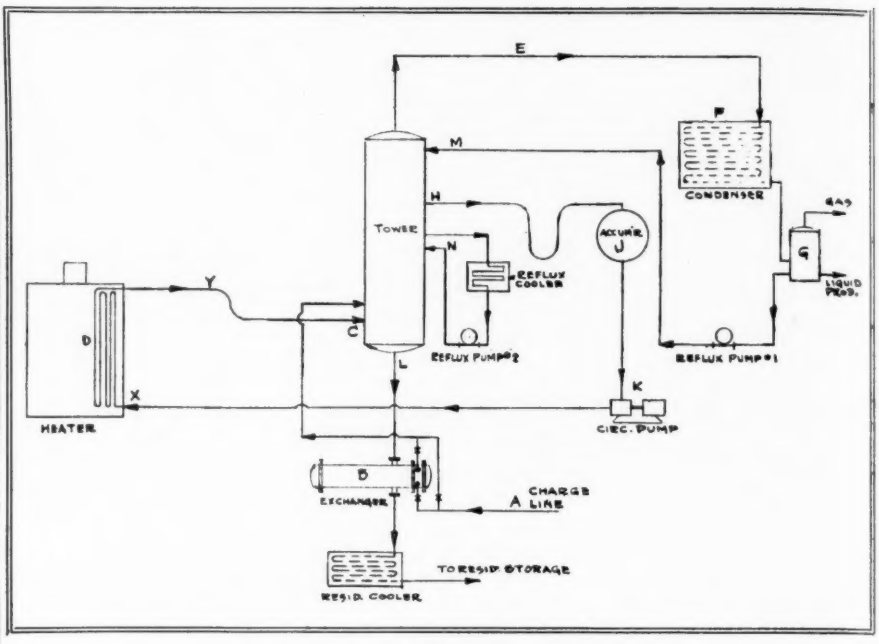
Highest grades of

KEROSENE
TRANSFORMER OIL
TURBINE OILS
LUBE OILS
WHITE OILS
MEDICINAL OILS
NON-DETONATING GASOLINE

In use by leading refiners in U. S. A. and Foreign Countries

For full information apply

AGEFCI
11 W. 42nd St.
New York N. Y.



Flow chart of the de Florez process

heat exchanger counter current to the hot residuum from the bottom of the tower and is then injected into the side of the bubble tower in an open stream just above the point where the vapors from the heater are introduced.

The hot vapors thus distill out the light ends of the crude and the heavy ends, those fractions which if carried a step or two further would form coke, are knocked down into the bottom of the tower from which they are continuously discharged as they reach a certain height, to pass through the heat exchanger, through a tar cooler and thence to fuel oil storage.

Gasoline vapors pass out at the top of the tower and a gas oil stream for recycling is bled off one of the upper trays in the bubble tower into the accumulator tank from which it is picked up by the circulating pump and fed into the economizer and thence into the heater.

Thus only clean stock passes through the tubes in the heater and the dirty stock is stripped of its coke forming constituents in the bubble tower while being skimmed and partly cracked at the same time.

The plant is now producing about 300 barrels a day of gasoline and is running from 1100 to 1200 barrels a day of charging stock according to its quality. Two men on a shift run the plant. All controls and indicators are centered on an instrument board in the control house, where is located the drum in which the distillate and fixed gas are separated.

The gasoline goes to storage. The fixed gas goes to a compressor which strips it of part of its gasoline content (about 1¼ gallons to the 1000 cubic feet). The stripped gas then goes to the burner of the cracking plant heater and the excess is piped to the boiler furnaces. The gasoline extracted from the gas is led back into the separating drum.

On the control instrument board are the de Florez automatic controllers for regulating the temperature in stills, which was described some time ago in NATIONAL PETROLEUM NEWS, and indicators which show temperatures and pressures in various parts of the system.

The accompanying flow sheet shows how the system works and the following explanation of the diagram is given:

"In operation the charging stock enters through line A, passing through the heat exchanger B and entering a mixing chamber at C, where the heated charge stock is further heated by the cracked vapors discharged from the heating coil D.

"The mixture of vapors and fresh charge in the dephlegmating tower, passes upwards through a series of baffles and bubble trays and fixed gases and gasoline vapors are discharged through line E to the condenser F, thence to a separating tank G, where the liquid products and gases are drawn off.

"The tower discharges a second overhead stream at a point H intermediate between the connection to the vapor inlet and the gasoline outlet. This stream is collected in an accumulator tank J connected to the circulating pump K which discharges the product obtained from the point H, which may be termed recycle stock, to the entrance of the heat-

ing coil at X under considerable pressure.

"The liquid is then heated, vaporized and cracked in the heating coil and discharges through line Y into the tower to heat the incoming charge. The residuum made during the operation is discharged through the line L through the heat exchanger B and thence through a cooler to storage.

"For the purpose of control, reflux is admitted to the top of the tower through line M in addition to which a secondary reflux is admitted at point N in the tower. The top reflux is made up of fractionated naphtha obtained from the separating drum G while the secondary reflux is obtained from a tray in the tower and subjected to cooling before it is returned.

"One of the features underlying the operation of the system is to obtain a clean circulation by producing a cycle stock which has been distilled and condensed to make possible its vaporization without deposition of carbon and at the same time permit accurate measurement and high entrance pressures to the heating coil which will result in high tube velocities and minimize carbon formation.

"It will be seen from the flow sheet that not only are the cracked products subjected to accurate fractional condensation, but such part of the charge stock which is taken into the accumulator drum and thence passed through the heating coil, must have been vaporized and condensed. This arrangement permits operation on any type of charging stock, the variations and character being compensated for by varying the amount of circulation, the temperature outlet of the coil and the amount of heating performed in the heat exchanger.

"The control of the operation both in the quality of the cycle stock and the overhead is effected by the primary and secondary reflux."

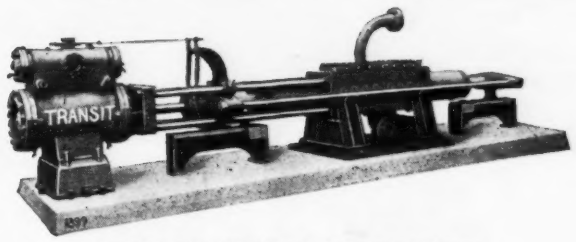
Safety Talks Go On The Air

CHICAGO, April 26. — Thirteen weekly radio programs to awaken a sense of individual responsibility in safety are being sponsored by the National Safety Council. The programs began April 20 and will be on the air each Saturday evening through 27 stations of the National Broadcasting Co. systems at 7:15 o'clock eastern daylight savings time.

Republic Opens New York Office

CLEVELAND, April 30.—T. W. Arsdale has opened a new branch office at 11 Broadway, New York, for the Republic Oil Co. of Pittsburgh, of which O. D. Robinson is the head. Mr. Van Arsdale formerly was with the Jobbers Oil Corp. of Buffalo.

TRANSIT HOT OIL PUMPS
are simple and dependable



18x6x24" TRANSIT Single End Packed Plunger Pump. 515 lbs. pressure, 110 g.p.m.

Refiners have learned to appreciate simplicity in pumps.

Simple, slow moving, long stroke reciprocating pumps are long lived, safe and dependable, and every man around a refinery understands them. The works are on the outside. Minor adjustments and repairs are easily made by any handy man.

NATIONAL TRANSIT
Pump and Machine Company
Oil City, Pa.

New York · Philadelphia · Pittsburgh · Cleveland · Los Angeles · Tulsa · Houston

Contact Filtration by Sweetlands
" " " no other method is as satisfactory

SWEETLAND Pressure Filters appear—at least the experience of more than 100 refineries would make them appear—to be the most suitable type of filter for handling the fine clays with the minimum of expense and losses in the cake.

So if you are planning to change over to treating oils and distillates by fine clays, make sure the filter is a Sweetland.

OLIVER UNITED FILTERS INC.
Successor to Oliver Continuous Filter Co. and United Filters Corporation

SAN FRANCISCO, Federal Reserve Bank Bldg. · NEW YORK, 33 W. 42nd St. · CHICAGO, 565 W. Washington Blvd.
SALT LAKE CITY, Felt Building · LOS ANGELES, Central Building · LONDON, W.C.1, 150 Southampton Row · PARIS, 63 Ave. des Champs Elysees

Factories: Oakland, California · Hazleton, Pennsylvania

VAPOR PHASE REFINING
WILL
Increase your gasoline yields,
Improve your gasoline quality,
and
Reduce your refining costs.

THE GRAY PROCESSES CORPORATION
961-975 Frelinghuysen Avenue
NEWARK, NEW JERSEY

KILL FIRE WHILE IT IS YOUNG

FOAMITE Extinguishers snuff out these smaller fires

Even the small fire holds possibilities of disaster—unless you can snuff it out quickly. That's where the smaller FOAMITE Equipment—FOAMITE Extinguishers and FOAMITE Engines—fits into your fire protection plan. Located at strategic points, this smaller FOAMITE Equipment helps you to kill every small fire while it *is* small.

The 5-gallon extinguisher discharges 40 gallons of fire-smothering *Firefoam*. With its greater capacity it backs up your 2½ gallon extinguishers and gives added protection at points where the fire is apt to be larger.

Call an American-LaFrance and Foamite representative to study the conditions on your property and suggest where the 5-gallon extinguisher and other units of FOAMITE Protection are needed. There are representatives at points convenient to all principal oil producing and refining centers. American-LaFrance and Foamite Corporation, Engineers and Manufacturers, Dept. E-28, Elmira, New York.

AMERICAN-LAFRANCE AND FOAMITE PROTECTION

A Complete Engineering Service

For Extinguishing Fires

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

THE first plant to manufacture lubricating oils from West Texas crude is about to be built. It will be at the refinery of the Rio Grande Oil Co., El Paso, Tex. This is according to Max B. Miller whose company, he states, has been commissioned to build the plant. The crude oil comes from the Rio Grande Oil Co.'s own leases in Loving county, north of Pecos.

Equipment is to be installed to make a complete line of finished lubricating oils from this crude, according to Mr. Miller who says: "Outside of Pennsylvania this crude makes the finest lubricating oil I have ever seen."

This oil is not what is known as regular West Texas crude, being of a different character, although it is expected that good lubricants will be made from some of the other West Texas oils.

* * *

CRACKING of West Texas crudes or their distillates and residues will doubtless be done extensively within a short time. Some of the big refineries that are running large quantities of these crudes probably are cracking them now on a more or less large scale. However, little has been published about results obtained by such operations.

The Imperial Refining Co. tried out some West Texas fuel oil in Dubbs cracking stills at its Ardmore, Okla., refinery. According to C. M. Alexander, general manager of refineries of the company, the results were not as satisfactory as those obtained on other cracking stocks.

Corrosion was not particularly troublesome, Mr. Alexander says, possibly because the highly sulfurous oils were blended off about 50-50 with Mid-Continent fuel oil before being changed to the cracking still.

Products obtained by cracking the West Texas oil were found inferior in quality to those from other stocks, according to Mr. Alexander. It seemed also that the coke yield was greater and the oil was suspected although not convicted of having other undesirable characteristics as a cracking stock.

* * *

THIS C. M. Alexander is the man who, while in the employ of the Gulf Refining Co. several years ago, did a lot of research work on vapor phase cracking and took out a number of patents assigned to the Gulf. It was these patents that were included in the agreement of the Gulf and The Texas Co., with those of W. A. Hall (the latter owned by The Texas Co.) which resulted in the building at Bayonne of the de Florez vapor phase cracking process which is now about ready to be licensed for use by other refiners.

Mr. Alexander left the Gulf in 1919 to become a consulting refinery engineer. He practiced thus in Tulsa until April, 1926, when he took his present position as general manager of refineries for the Imperial Refineries which include the Imperial Refining Co., Ardmore, the Kettle Creek Refining Co., El Dorado, Ark., the San Angelo Refining Co., San Angelo, Tex., and the Wickett Refining Co., Wickett, Texas.

Headquarters of the Imperial Refineries are in Tulsa. W. B. Hassett is president.

* * *

A READER writes in to tell me that the original Burton patent, No. 1,049,667, expires in July this year and he wants to know whether its expiration will make any difference in the cracking patent situation.

He is incorrect as to the expiration date. The patent does not run out until Jan. 7, 1930, according to R. J. Dearborn, patent attorney for The Texas Co. which company is a charter member of the Patent Club along with the Standard of Indiana, which owns the Burton patent.

Patent No. 1,049,667 covers distilling and condensing oil under pressure of from about 75 to about 90 pounds per square inch, if memory serves. Concerning the expiration of this original Burton patent, Mr. Dearborn says:

"Expiration will not affect the patent situation because the Burton process, as commercially operated is covered by many other patents which have several years to run and modern cracking processes are covered by a large number of patents which have many years to run."

* * *

THE Patent Club members in reducing the royalties charged for license to use their cracking processes have made what seems a good move in two ways. In the first place it gives the refiner a chance to make a little better profit, other things being equal, on his refining operations. And besides, it may make him feel more friendly toward the Patent Club lineup. He may be less likely to start something.

The particularly wise angle of the royalty structure the patent owners have built up, is that of permitting refiners to obtain a perpetual license to use a cracking process upon payment of a lump sum that amounts to only two or three years' royalty or even less in the case of very large scale operations.

This scheme gives the refiner a chance to save money.

It is a good thing for the Patent Club members, too, because once a refiner has paid his lump sum in cash, the licensor has his money and he never gets it back whatever happens. If the patents should ever be invalidated, that, presumably, would not get the refiner's royalty money back.

In such a tangled patent situation it seems that the Patent Club members have done a good thing in this latest move.

Modern Liquid Phase Cracking Plant Has Become a Whole Refinery

By George C. Hargrove*

(Written Especially for National Petroleum News)

THE developments in liquid phase cracking have resulted in the "cracking process" changing from a special piece of equipment using selected, clean, overhead charging stocks to a workaday tool which will take most anything in the way of petroleum that can be pumped and turn back to the refiner a greater percentage of gasoline, with fuel oil bottoms which will be saleable, or apparatus that will go to the extreme and give an ultimate yield of gasoline, coke and fixed gases.

On the handling of heavy cracking stocks, asphaltic crudes, reduced crudes, heavy fuels, etc. the methods in vogue today may be divided into two main classifications, (1) the introduction of the feed direct to the cracking unit as formerly practiced only with gas oil stocks and (2) a preliminary pipe still cracking operation on the charging stock and cracking the gas oil thus produced in the regular manner.

In practice, the last method is really conducted as an integral operation as the products from the two furnaces are discharged into common evaporators and fractionating towers.

Both methods are good ones and have their advantages and disadvantages. The decision as to which type to use rests with the individual refiner and his plant and market conditions. The first method is the simpler of the two, as it involves less equipment, the disadvantage being that the heavy asphaltic bottoms must pass through the tubes at least once.

This will, of course, result in a shorter length of time on stream and an increase in cleaning cost. In the great majority of cases, it will give the greatest gasoline yield with a Bunker "C" specification fuel oil.

In the second method the charge is subjected to a mild cracking action in a furnace. This tends to break to some extent the viscosity of the bottoms and at the same time distils off the small amount of gasoline produced and gas oil for a charging stock.

As stated previously, the furnace for the initial light cracking of the charge or "viscosity breaker" as it is termed, discharges into a common evaporator with the products of the cracking furnace. Thus, from the evaporator on this operation we have with the gasoline produced from both operations a mixture of what may be termed "straight run" gas oil from the viscosity breaker and recycle gas oil from the cracking operation. This clean overhead mixture is condensed in the fractionating tower and taken hot to the cracking unit.

We thus have exemplified the two schools of thought in cracking residual or asphaltic oils, direct charge to the process versus only overhead or clean stocks to the cracking unit.

The overhead stock method has its proponents and there is no question that the time on stream is longer,

*Engineer, M. W. Kellogg Co.

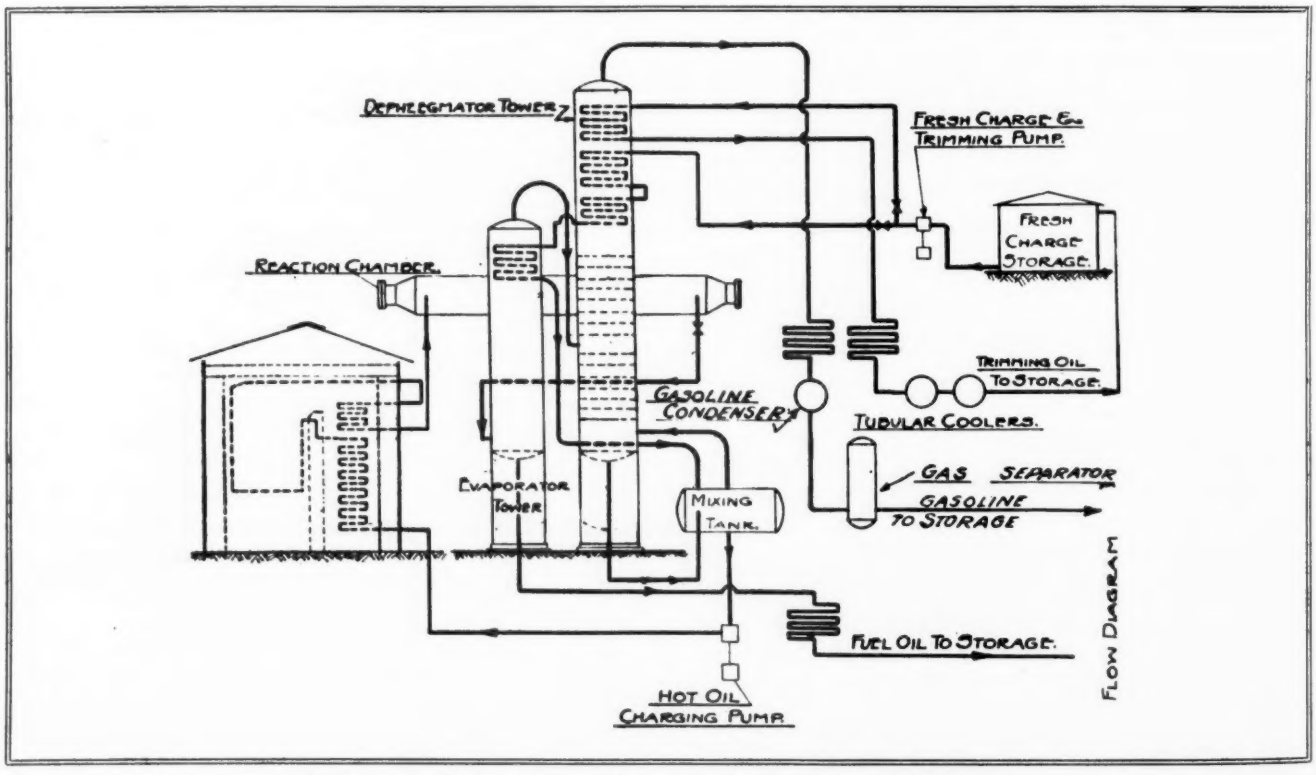
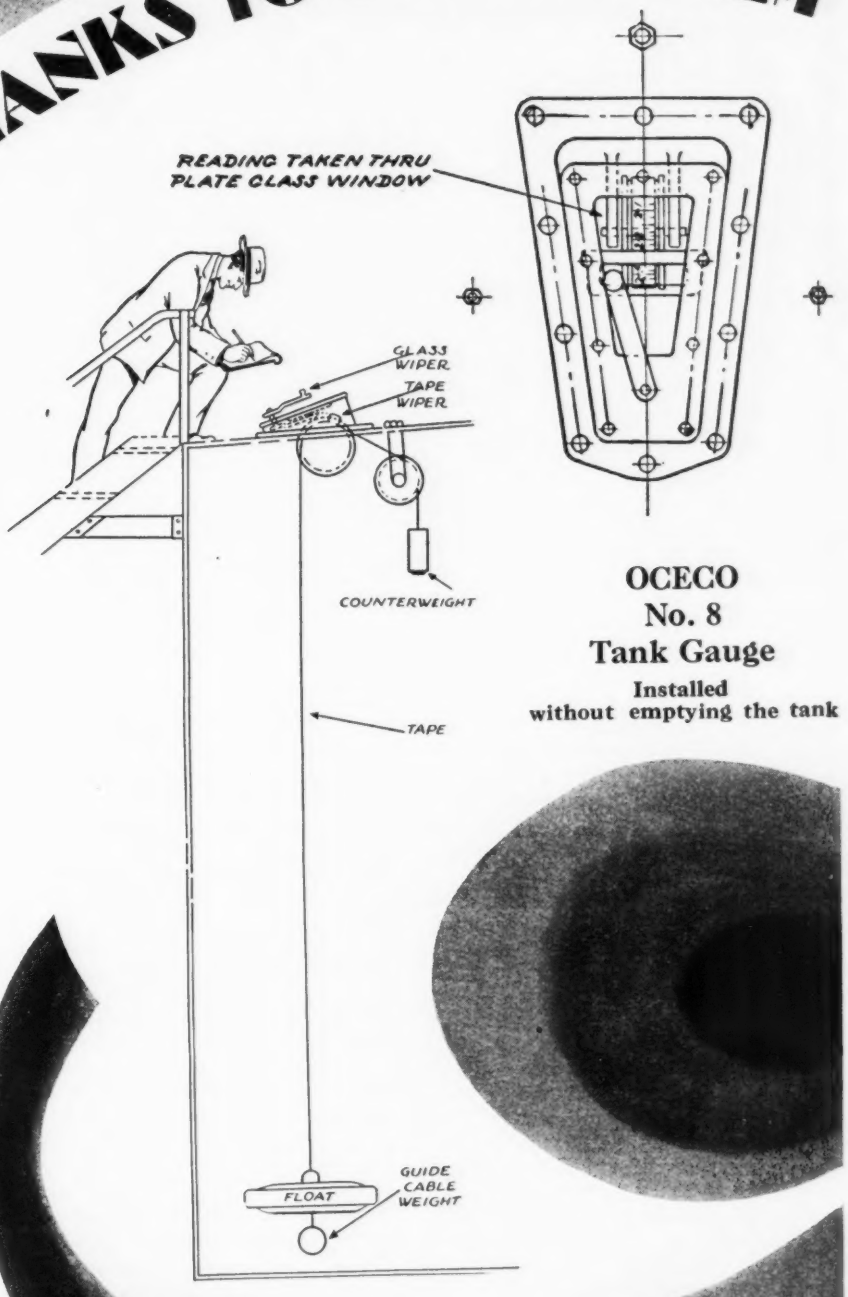


Fig. 1—Standard Cross cracking unit, hot oil recirculating type

DON'T OPEN YOUR TANKS TO GAUGE THEM



OCECO
No. 8
Tank Gauge
Installed without emptying the tank

HERE is a safe, accurate and easy way of gauging your tanks at lowest cost —the Oceco No. 8 Tank Gauge.

Simply take readings at the top of the tank—no opening of tank or even relieving pressure.

A gauge, too, that is thoroughly gas-tight and pressure tight . . . . no evaporation, no fire hazard . . . . ***quick, safe*** gauging.

We shall be glad to send you complete information on how this gauge is saving both men and oil.

THE OIL CONSERVATION ENGINEERING CO.
877 Addison Road - Cleveland, Ohio

Engineering and Sales Service:
25 Broadway, New York Tulsa Trust Bldg., Tulsa, Okla.
Neilan, Schumacher & Co., Los Angeles, Cal.
Box 552, Beaumont Texas

OCECO FITTINGS
Wherever Oil is Stored

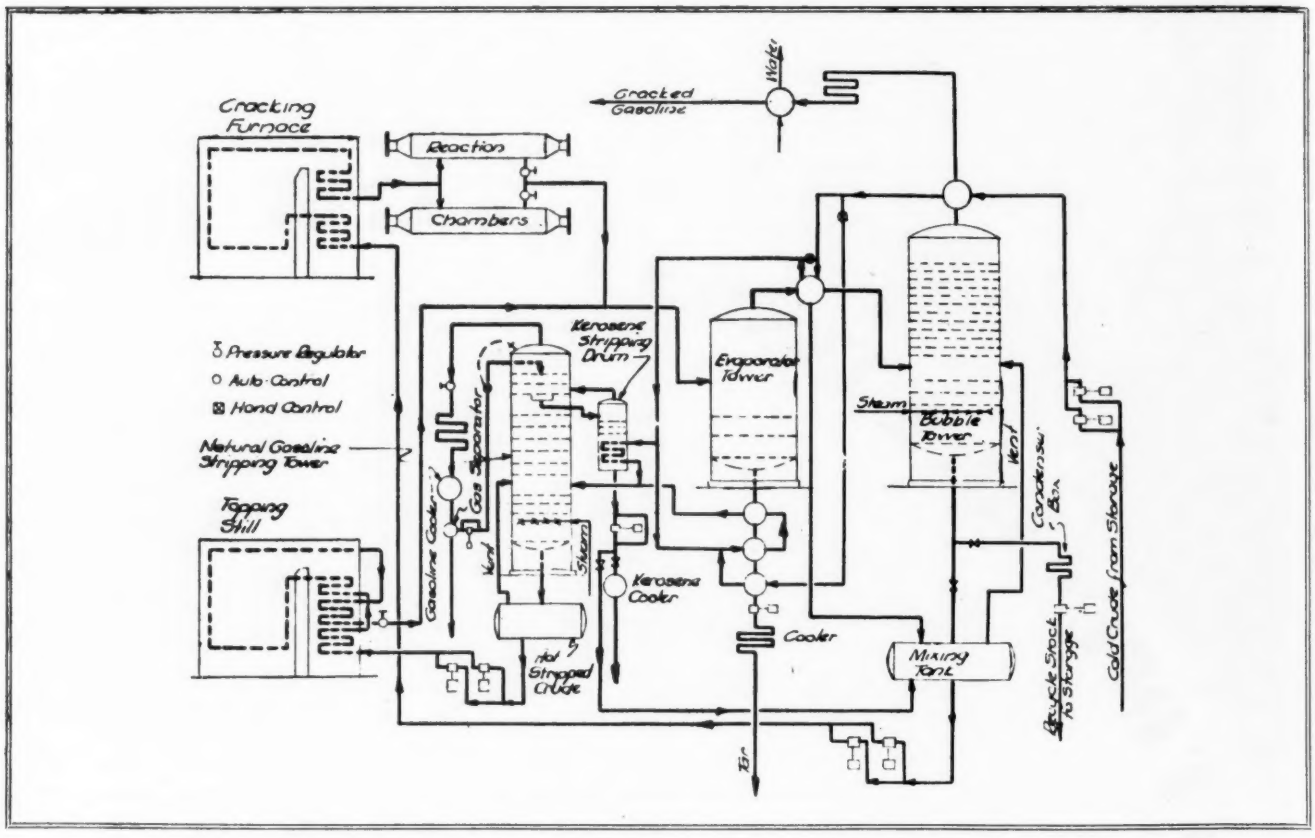


Fig. 2—Flow chart of crude oil unit with stripping tower, viscosity breaker and Cross hot oil recirculating unit

which results in a decrease in cleaning costs. The gasoline yield in quite a few cases is practically the same, in other cases the first method will give a 3 to 5 per cent greater yield.

It may be mentioned that in case 1, assuming a Bunker "C" specification on the fuel as a requisite in both cases, the ultimate gasoline yield will be limited by the B. S. content of the fuel, while in the second method the limitation will be found to lie with the Furol viscosity of the residue.

The M. W. Kellogg Co. has built both types, using a standard Cross hot oil recirculating cracking plant for the direct charge and a high pressure pipe still in conjunction with the same type of cracking unit to form the necessary plant for the practice of the second processing method. Reference to the flow chart, Figure 1, will show the oil flow in a standard type Cross unit.

It does not seem to be generally recognized that this plant will handle every type of cracking stock and that commercial installations are operating on such varied stocks as distillates from California crudes, Smackover crude, 17 gravity reduced Venezuela crude and gas oils from practically every known crude.

Figure 2 is a flow chart of a typical plant using the high pressure viscosity breaker in connection with the Cross unit. This type of operation is usually only applied to heavy stocks.

Where a crude oil with a considerable percentage of gasoline is used for charging stocks, it is quite often desirable to keep the straight run gasoline separate from the cracked product. This is particularly desirable if different methods of treatment are required on the two types of product, or a kerosene cut is to be made.

In these cases, a flash tower is interposed between the accumulator tank and the preheating coils of the system and the waste heat is used to flash off the natural gasoline and kerosene, if the same is desired. This type of plant was described in the March 13 issue of NATIONAL PETROLEUM NEWS and such a scheme readily lends itself for use with either a direct charge of the topped crude to the cracking unit, or the alternate of through the viscosity breaker.

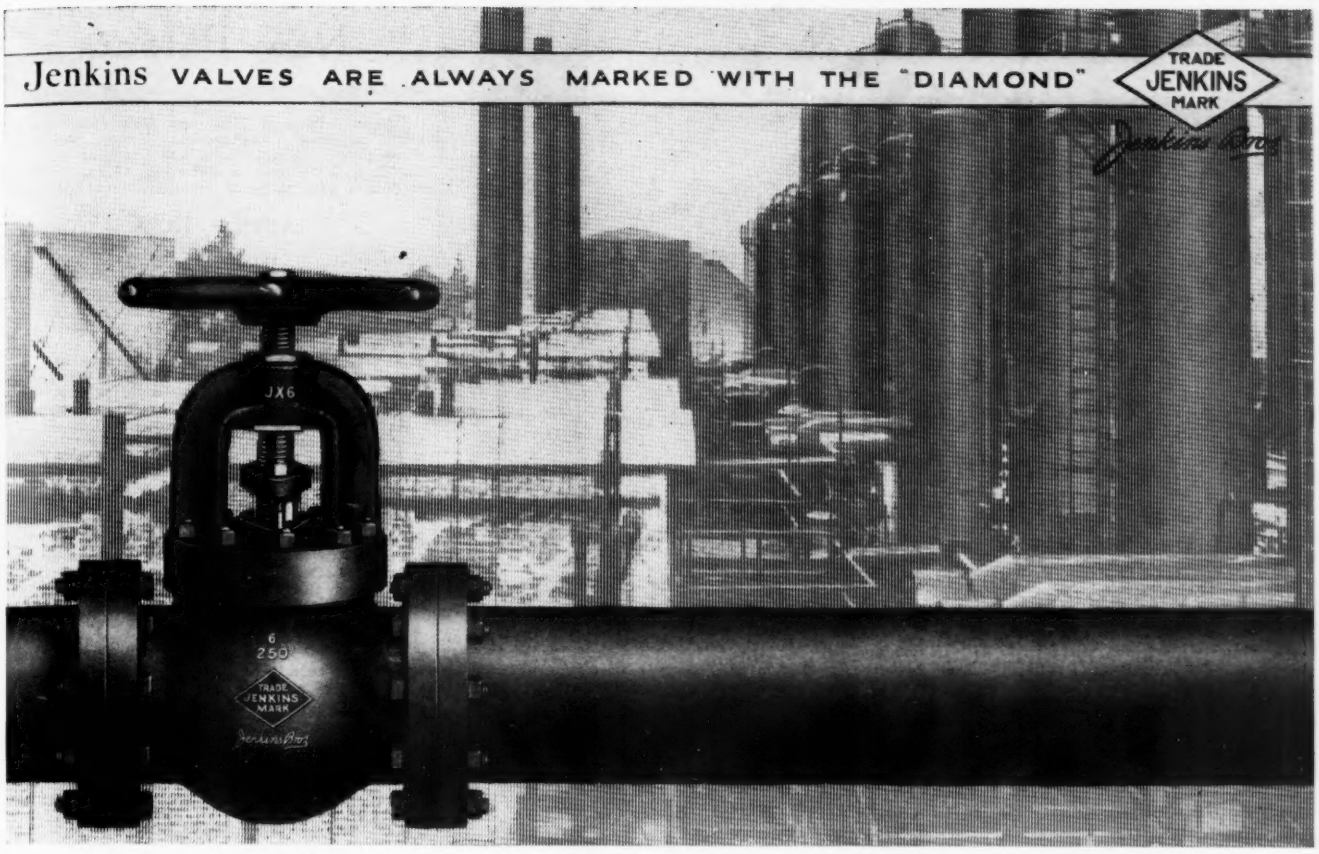
The most recent development in high pressure cracking is a non-residuum operation. In this development no reaction chamber is used, and all cracking is accomplished within the coils. The usual evaporator tower in this case becomes a coking drum which is usually installed in duplicate, so that the cleaning of one drum can be accomplished while the unit is running to the spare.

Results from this operation are quite interesting as on a 10 per cent Mid-Continent crude bottoms mixed in the proportion of 15 per cent of gas oil and 85 per cent of the bottoms to make a mixture that could be pumped there was obtained a gasoline yield in excess of 60 per cent of the fresh charge and with Winkler crude oil, the yield obtained was about 73 per cent. The gasoline had an intermediate boiling point in both cases of better than 50 per cent off at 284. Other stocks have been cracked by this method with about the same results.

Generally speaking and referring particularly to the Cross process, high pressure cracking has proven itself particularly valuable for handling the heavy residuals and cheap asphaltic crudes and can obtain profitable yields of gasoline from such stocks either by direct charge to the process, or in combination with a viscosity breaker, the choice of method depending on the stock and the refiners market and plant conditions.

For crudes with normal gasoline percentages, it is possible to produce straight run gasoline, kerosene and cracked gasoline in one continuous operation. A nonresiduum process has been developed which will give an increased yield from practically any liquid cracking stock.

The liquid phase cracking unit has therefore developed from a specialized piece of apparatus with an ability to handle only a few, clean, overhead stocks to a process which is a refinery within itself.



Above: Fig. 162, Jenkins Extra Heavy Iron Body Globe Valve, flanged.

Count on a Jenkins to hold the line

IDEAL valve performance in a pipe line may be defined as long-run, trouble-free service. The kind of performance assured by valves that, when open, make possible unretarded flow and, when closed, are absolutely leak-tight, . . . valves which have the strength to stand the strains of pipe settling and of frequent operation.

Jenkins Valve service meets this definition. Refinery engineers know they can count on a Jenkins. That in the most severe oil-line service, Jenkins Valves will "hold the line" day in and day out, unflinching and dependable.

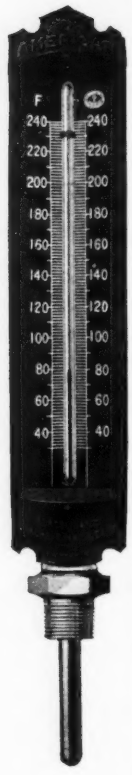
The reason is to be found in Jenkins exacting selection of valve metals, correct design and precision manufacturing methods. For new installations or replacements, when buying valves, ask your supply house for Jenkins "oil-tested".

JENKINS BROS.

80 White Street, New York, N.Y. — 133 No. Seventh Street, Philadelphia, Pa.
524 Atlantic Avenue, Boston, Mass. — 646 Washington Boulevard, Chicago, Ill.
JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Canada

Jenkins
VALVES
Since 1864

WHEN TEMPERATURES ARE IMPORTANT



Only the Best Thermometer Pays

THE American Industrial Thermometer is accurate. When requested, a test certificate is issued with each thermometer, which assures its accuracy by comparison with a U. S. Bureau of Standards Certified Thermometer. Never guess at temperatures and never take chances with the accuracy of the thermometer you buy.

The case is made of cast brass, "V" shaped, all black enameled. A plate glass front protects the scale. The scale is hand-calibrated to its respective tube and the subdividing lines are engraved (not stamped). The glass tube is thoroughly annealed for 6 days for permanent accuracy. Only double distilled mercury is used, and the tube is filled with nitrogen gas to prevent separation of the mercury column. The bulb chamber is Monel Metal, giving maximum strength and protection against corrosion.

American Thermometers are made in all styles for every industrial purpose. Scale sizes are 7", 9" and 12". Standard ranges are from minus 40 to 1000° F.

When temperatures are important, only the best thermometer pays.

Specify Catalogs Desired

Hancock Globe & Check Valves.....X-27
American Recording Thermometers..H-27
American Temperature Controllers...R-27
American Glass Thermometers.....F-27
American Gauges.....A-27
American Recording Gauges.....E-27

AMERICAN INSTRUMENTS

Since 1851

CONSOLIDATED ASHCROFT HANCOCK CO. INC.
Subsidiary of Manning, Maxwell and Moore, Inc.
100 East 42nd Street, New York City

New Patents

Prepared by R. E. Burnham, patent and trademark attorney, Continental Trust Building, Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

April 9, 1929

REFINING

Process for heating oils—John C. Black, Destrehan, La., assignor to Gasoline Products Co., Wilmington, Del. Filed May 9, 1924. No. 1,708,076.

Method for the treatment of hydrocarbons, especially oils by means of corona arc discharges—Wilhelm Esmarch, Berlin-Charlottenburg, Germany. Filed March 28, 1925. No. 1,708,126.

Art of cracking hydrocarbon oils—Edward W. Isom, Scarsdale, N. Y., assignor to Sinclair Refining Co., New York, N. Y. Filed May 21, 1927. No. 1,708,180.

Apparatus for treating hydrocarbon oils—Joseph B. Weaver, Chicago, Ill., assignor to Gyro Process Corporation. Filed July 22, 1925. No. 1,708,247.

Process of cracking petroleum hydrocarbons—Charles R. Downs, New Haven, Conn., assignor to Weiss & Downs, Inc., New York, N. Y. Filed Dec. 1, 1925. No. 1,708,303.

Pressure cracking treatment of liquid hydrocarbons. Evelyn S. L. Beale, George H. Coxon, and Albert E. Dunstan, London, England, assignors to Anglo-Persian Oil Co., Ltd., same place. Filed May 9, 1928. No. 1,708,782.

PRODUCTION

Pump-jack—Arnold Bohnenblust, Riley, Kans. Filed Jan. 12, 1926. No. 1,708,213.

Derrick-elevator—Peter R. Meadville, Lawton, Okla. Filed Oct. 1, 1927. No. 1,708,317.

Pumping-rig—Richard C. Mason, Tulsa, Okla. Filed April 27, 1925. No. 1,708,584.

MISCELLANEOUS

Lubricating mixture and process of making same—Preston C. Goss, Muncie, Ind. Filed Feb. 7, 1927. No. 1,708,058.

Process and apparatus for reclaiming waste oil—Rudolph R. Rosenbaum, Chicago, Ill. Filed June 1, 1927. No. 1,708,488.

Process of imparting fluorescence to oil—John C. Black, Destrehan, La., Wirt D. Rial, Los Angles County, and John R. McConnell, Whittier, Cal., assignors to Pan American Petroleum Co., Los Angeles. Filed Oct. 13, 1926. No. 1,708,563.

Process of purifying and adding a green fluorescence to lubricating oil—Wirt D. Rial, Watson, and Whitford R. Barratt, Palos Verdes Estates, Cal., assignors to Pan American Petroleum Co., Los Angeles. Filed June 7, 1927. No. 1,708,592.

Process for making a fluorescent product—John C. Black, Los Angeles, Wirt D. Rial, Los Angeles County, and John R. McConnell, Whittier, Cal., assignors to Pan American Petroleum Co., Los Angeles. Filed May 6, 1927. No. 1,708,602.

Price-indicator for liquid-dispensing pumps—John B. Raper, Tonkawa, Okla. Filed June 11, 1927. No. 1,708,779.

* * *

April 16, 1929

REFINING

Refining of petroleum—Ernest B. Phillips, East Chicago, Ind., and James G. Stafford, Chicago, Ill., assignors to Sinclair Refining Co., Chicago. Filed Aug. 7, 1923. No. 1,709,149.

Process of purifying petroleum oils—John C. Black, Destrehan, La., and Wirt D. Rial and Raymond T. Howes, Wilmington, Cal., assignors to Pan American Petroleum Co., Los Angeles, Cal. Filed April 26, 1926. No. 1,709,203.

Treating hydrocarbon oils—Otto Behimer, Port Arthur, Tex., assignor to Texas Co., New York, N. Y. Filed Aug. 11, 1925. No. 1,709,302.

Treating hydrocarbon oils—Guy B. Bogart, Lockport, Ill., assignor to Texas Co., New York, N. Y. Filed Feb. 17, 1927. No. 1,709,304.

Method of refining minerals oils—Arthur Lachman, Berkeley, Cal., assignor to Richfield Oil Co., San Francisco, Cal. Filed Dec. 8, 1926. No. 1,709,315.

Process for refining hydrocarbons—John C. Black Destrehan, La., and James W. Weir, Fillmore, Cal. Filed March 2, 1923. No. 1,709,518.

Apparatus for ionization and catalytic treatment of matter—Ira W. Henry Greenwich, Conn., assignor to Ionizing Corporation of America, New York, N. Y. Filed Jan. 15, 1927. No. 1,709,813.

Apparatus for and method of ionization and

hydrogenation of hydrocarbon starting material, vapor, and oil—Ira W. Henry, Greenwich, Conn., assignor to Ionizing Corporation of America, New York, N. Y. Filed Aug. 4, 1927. No. 1,709,814.

Apparatus and method for dissociating hydrocarbon fluids and solids for production of gas and liquids of lighter molecular weight—Ira W. Henry, Greenwich, Conn., assignor to Ionizing Corporation of America, New York, N. Y. Filed March 20, 1928. No. 1,709,815.

PRODUCTION

Renewable-cutter reamer—Harry E. Brown, Tulsa, Okla. Filed March 3, 1928. No. 1,708,932.

Well casing and strainer—Joseph P. Lawlor and James I. Seay, Memphis, Tenn. Filed Jan. 13, 1926. No. 1,709,222.

Well-casing-pulling apparatus—Chalmer E. Watters, Prairie Depot, Ohio. Filed Sept. 25, 1926. No. 1,709,449.

Split casing spider—Ralph R. Hall and Ernest C. Culbertson, Ventura, Cal. Filed Oct. 24, 1927. No. 1,709,570.

MISCELLANEOUS

Revivifying Fuller's earth—Frank W. Hall, Port Arthur, Tex., assignor to Texas Co., New York. N. Y. Filed April 20, 1921. No. 1,709,261. 709,261.

Oil-pump drain-pipe—Thomas B. Bennett, Muskegon, Mich., assignor to Bennett Pumps Corporation, same place. Filed Nov. 18, 1926. No. 1,709,602.

Two Companies Deny Mergers Impend

CLEVELAND, April 27.—Pan-American Petroleum & Transport Co. and Sinclair Consolidated Oil Corp. are not involved in any immediate merger of those companies or in mergers with other companies, according to high officials of each company. Newspaper reports of expected mergers were wholly imaginative, the officials said.

Some credence had been given the reports by the fact that Sinclair is about to increase its authorized common stock from 5,500,000 to 10,000,000 shares, and also by the stock holdings in several companies by the Cutten interests of Chicago, the Fisher brothers of Detroit, and Blair & Co. and associates of New York.

Col. Robert W. Stewart has been mentioned as the head of an impending billion dollar consolidation. Col. Stewart is in New York but could not be located by long distance telephone. It was said at his Chicago office that he would return there about April 25.

The Dill Mfg. Co., Cleveland, is announcing a prize of $100 for the best name submitted by its dealers for a new display unit which it is placing on the market. The unit contains an assortment of tire valve parts, which sells to dealers for $9.95. One of the judges will be C. W. Seiberling, vice president of the Seiberling Rubber Co.

The company recently issued a handbook on tire valves and valve part application and replacement, which contains a description of the latest practices adopted by the Tire & Rim Assoc. of America, standard valve changeover information and cross index of Dill products.

for Modern Installations

Side View—Fulton Type Look Box

The Fulton Type Look Box—narrow and compact—makes a very neat installation.

Flanges can be furnished for two, three, four and six inch pipe.

Write for Descriptive Bulletin No. 38

JOSEPH REID GAS ENGINE COMPANY
Oil City, Pennsylvania, U. S. A.

EXPORT SALES REPRESENTATIVE: Oil Field Equipment Co., Inc. 30 Church St., New York City

The Business of Oil Production

published by Johnson, Huntley and Somers, makes it possible for the beginner in the oil-producing business to obtain a working knowledge of the best methods and of their application.

The man who is experienced will find that it will answer practically any question that may arise on the business side of his enterprise.

The cost of this book is $3.50 and may be obtained by sending your check to—

National Petroleum News, 1213 W. 3rd St., Cleveland, O.

Gott *Water Cans & Coolers*

Have a cool supply of clean-pure sparkling water... ready to drink at all times. No matter where you are the GOTT Water Can is health insurance.

Your supply store has them.

GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.

GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.

Gotkool

H. P. GOTT MFG. CO. · Winfield, Kansas

KEEP PURE DRINKING WATER ALWAYS HANDY

Along the Air Lanes

New Airport Installations Provide Faster Filling

LOS ANGELES

MODERN, high-speed underground installations of equipment for both fueling airplanes and servicing them with lubricating oil as well, will soon be found at regular commercial flying fields, according to Dudley M. Steele, manager of the aviation department of the Richfield oil Co. of California. The time element has made this necessary, the company believes.

Because of the infancy of the aviation industry, no uniform method of servicing planes at airports has yet been developed, said Mr. Steele. "At one landing field a plane is fueled by the old hand-can method; at another, by a gasoline drum with a pump; at the next, with the drum mounted possibly on a truck; at a fourth, filling may take place direct from the marketing company's delivery system with a compressor attached to the tank."

"While there has been an evolution in the servicing of automobiles with gasoline, there has been virtually no change in the handling of lubricating oils," he said. "With time and speed such factors in aviation, the hand-can method of oiling used for automobiles cannot be used for airplanes, because of the larger quantities required at a time, such as eight gallons for a single-motored ship up to 30 gallons for tri-motored planes. The better practice which will come into use is the installation of oil tanks underground which can be filled directly from bulk oil containers, and the oil electrically heated to get better flowing qualities. Force feed pumps will be used to gain speed."

Chances for accidents are lessened with as much movable equipment out of the way as possible, Mr. Steele pointed out. The cost of the latest type of electric underground fueling pit with a 50-foot self-reeling hose, 25 to 30 gallon-per-minute dispensing capacity and 1000 gallon storage tank, is approximately $2500 or more or less, varying as the cost of a truck varies, he said.

However, the depreciation on a truck is about two and one-half times as great as that on the underground equipment, he said, and the truck, besides, consumes gasoline and oil and needs constant attention and repair.

Dudley M. Steele
Manager, Aviation Department, Richfield Oil Co. of California, Los Angeles

Underground equipment depreciates much more slowly, is virtually foolproof, is seldom out of order, never in the way, requires only a minimum of electrical current to operate, and is far more economical than mobile equipment, Mr. Steele said.

* * *

Flying from New York to Los Angeles on the tri-motored Fokker Super F 10-A airplane recently purchased by the Rio Grande Oil Co., Los Angeles and El Paso, Tex., were L. M. Lockhart, secretary and general manager of the company; Mrs. Lockhart, and Mr. and Mrs. Charles S. Jones.

The trip took five days. Stops were made at Washington, Atlanta, New Orleans, Fort Worth, Pecos and El Paso, also Phoenix, Ariz. The company operates refineries at the two latter points.

The plane will be used principally for inspection of properties in California, Texas and Arizona. Luke Littlejohn, formerly a war aviator, will be chief pilot.

* * *

Surveying the scenic wonders of the Grand Canyon and the Colorado river was done recently by Warren E. Carey, southern California aviation representative of the Union Oil Co. of California, and C. F. Lienesch, manager of technical relations department of the company.

* * *

Miss Marvel Crosson, who came within 500 feet of the existing altitude record ascension for women in February, expects to establish a new record for women shortly in a Union Oil Co. plane.

* * *

Four new oil products especially designed to meet the demands of faster driving and resulting hotter motors, have been announced by the Vacuum Oil Co. These consist of three oils and one grease: Mobiloil Aero "D" for airplane and other automotive engines; Mobiloil Aero "H," a special oil for very heavy duty and racing airplane engines; Mobiloil "CW" and Mobilgrease for gear and chassis lubrication.

* * *

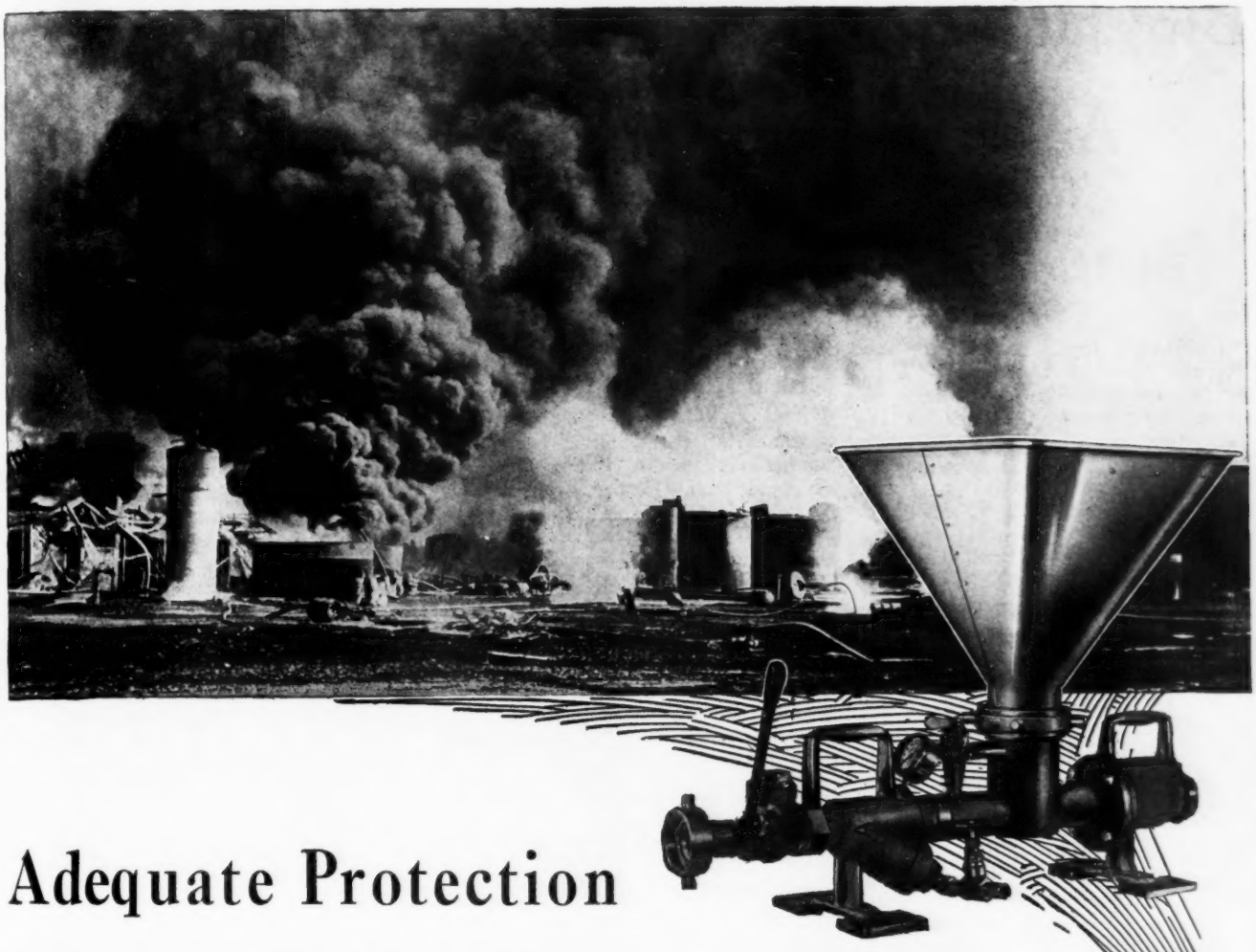
Another company to promote the cause of aviation by cooperation is the Parkersburg Rig & Reel Co. which has lettered "Parkersburg" on its steel derrick plant roof here in letters 12 feet high. An arrow points toward the local airport. This city is not yet on an air mail route but it is expected to be before long.

* * *

Gasoline and motor oil of the Sun Oil Co. here, have been used for several years by the 118th Observation Squadron, Connecticut National Guard, of the 43rd division air service. The squadron has its headquarters at Brainard field, Hartford.

* * *

A handy new aviation roll map, indicating airports and other information of importance to the flyer, has been prepared by the Union Oil Co. of California. It operates on a spring roller, being contained within a small cylindrical metal holder that is held on the instrument board by suction cups, eliminating cumbersome folding and unfolding by the pilot while flying.



Adequate Protection

Depends upon a properly designed generator and pure, free-flowing dry chemicals—a generator that operates efficiently, with a minimum of attention, in the excitement of fire—no complicated operation. FOMON does!

And the use of proper chemicals is extremely important. They must be pure, 100% foam producing, easily handled and free-flowing. FOMON twin dry chemicals, fed simultaneously, meet all these requirements. Unlike the single powder method which contains a percentage of "filler" to preserve the ingredients, FOMON twin dry chemicals, requiring no "filler," are outstanding in that they produce 100% foam.

Every oil company, large or small, should be protected by FOMON. Our engineers, long experienced in oil fire protection, welcome the opportunity to prove the superiority of FOMON. Their services are available to the oil industry in helping to solve any fire protection problem.

Note:—the FOMON folder, giving description, with diagrammatic sketches, showing the portability and flexibility of the FOMON method of protecting oil properties will be sent upon request.

AMERICAN FOMON COMPANY

Specialists in Fire Protection to the Oil Industry

Drexel Building
Philadelphia, Pa.

Complete Warehouse Stocks: St. Louis Tulsa - San Francisco

Big Storage Tank at Service Station A Fort in Case of Price War

By Ward K. Halbert
N. P. N. STAFF WRITER

ATLANTA

STORAGE for at least one tank car load of gasoline is being incorporated in the plans for several new service stations in the south this year. It is being done by established oil marketers, mostly Independents, not merely by private filling station operators who hope to buy in tank car lots and build up huge gallonage by cutting prices.

"A jobber ought to have tank-car storage at one or more filling stations in every town where he operates," a Mississippi oil man said recently. "It is like a big standing army. It is an instrument of war but it has the effect of maintaining peace. A good side-track station belonging to a legitimate marketer in any town is a great discouragement to price cutting promotions."

Files of NATIONAL PETROLEUM NEWS will show that no motoring season has passed for ten years without the birth of some new promotion in the gasoline business. Almost invariably the idea is to "kid the public" into thinking they are being robbed by the big oil companies. Sell them all a membership while they are indignant, for about $10 apiece, and go in the oil business on their money.

Not all of them have had a membership feature. Several of these promotors have gone no further than to represent themselves as public benefactors and tried to keep the public's faith and patronage on that basis.

Some of them have been well-financed institutions like Larkin Soap Co., and Fain Grocery Co., who coveted the price cutter's halo for the favorable light it would reflect on their main business.

Some of them have been politicians like Charlie Bryan and W. H. McMaster who victimized the oil men of their states as minority voters while they got themselves elected to something.

Some of them have been just plain, misguided altruists who looked upon profitable merchandising as sin and sought to organize farmers into companies that were doomed to go broke before long.

Recently most of them have admitted that they came into the business for profit. They simply accuse the oil industry of robbery and direct the public's suspicion away from themselves.

But, however, they may differ, they are alike in two respects. They have all been tank car buyers who tried to defame a respectable industry for their own personal and selfish gain.

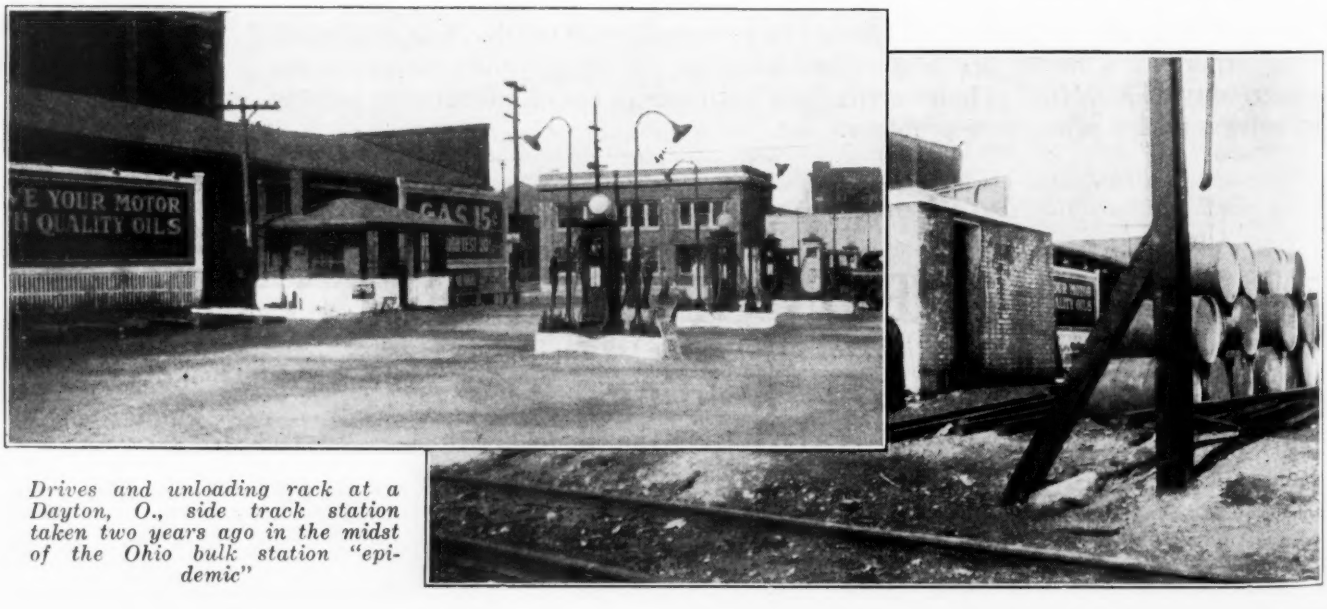
There is probably not a state in the Union without a promoter of side-track stations, on the order of Wolf of Ohio, Billups of Mississippi, Knower of Alabama and others.

"These side-track stations operate more cheaply than an ordinary station, a long way from a bulk plant," the Mississippi jobber said. "There is no secret about how to start them. There is no use for the oil jobbers already in business to allow a bunch of newcomers the exclusive right to a good idea. There is no reason why we can't have side-track stations too."

This same jobber has had plenty of unpleasant experience with promoters of side-track stations. He has lost money on account of them and he is intrenching himself to cope with them. He operates in a number of small towns and serves his remotest station currently with a tank truck, but it is so situated that it can accept shipments in car lots.

"I WOULD be justified in buying the tanks new," he said. "But it has not been necessary for me to do so. I have been fortunate enough to buy several tanks of 10,000-gallon capacity and better, second hand. I got them at almost junk prices from sidetrack operators who went broke in my neighborhood for one reason or another.

"Our company is expanding a little now. And when we go into a town



Drives and unloading rack at a Dayton, O., side track station taken two years ago in the midst of the Ohio bulk station "epidemic"

to select a service station location, we do not pick one down-town. Every small town has a good location that fronts on a good street and is close to a railroad. It may be on the edge of town but that is sufficiently close-in for our purposes. We build a nice station on the lot and we usually serve it with a truck but if a price war starts we will be ready to do business as cheaply as anybody.

"On two occasions promoters have come into towns where we were fortified in this way. They made inquiry around town for a side-track location. They even told a few people in town what they meant to do. But when they found out how we were situated they moved on quietly to a more promising field."

The Mississippi jobber is not by himself. An Independent marketer in Alabama recently related that he was doing substantially the same thing. He is not using 10,000 and 15,000-gallon tanks at service stations, however. He is installing three 3000-gallon tanks, connected with pipes underneath. Collectively they hold a tank car load of gasoline.

"THREE small tanks that aggregately hold a tank car load, cost more at the factory where they are made than a single tank with an equivalent capacity," the oil man said. "But there are economies in buying the smaller tanks. They are cheaper to handle, being easier to unload and transport after they leave the railroad. They are cheaper to bury because the hole does not have to be so deep. Most of the excavation can be made with a steam shovel. And there is greater salvage value to three small tanks than to one big one."

In NATIONAL PETROLEUM NEWS, issue of March 20, page 174, it was stated that certain manufacturers of service station equipment were discontinuing the manufacture of small service station tanks (meaning tanks of 300 and 500 gallons) because the demand had been observed to diminish. Oil men are going in rather generally for tanks at service stations of 2000 gallons and upward, and the 3000-gallon units are gaining in popularity.

The Alabama oil man says traffic congestion is responsible for the purchase of large tanks for use at service stations in big cities. In Birmingham, Ala., and Atlanta, Ga., and some other towns of 200,000 population and above, oil marketers have begun to deliver a great deal of gasoline at night when there is least traffic on the streets. If storage is large enough, a big tank truck can make a fill at night and not have to visit the station in day time at all.

Big tank trucks with trailers are a nuisance on city streets in the busy part of the day. Oil men dislike to

1879 GOLDEN ANNIVERSARY YEAR 1929

it is not enough
that you specify . . .

100% Pennsylvania Motor Oils

Don't specify simply "100% Pennsylvania Motor Oils." Specify "FREEDOM 100% Pennsylvania Motor Oils."

Then you sell a perfected blend made from 460-470 flash Bright Stock (Sharples Process) and 100% Pennsylvania Crude high flash Neutrals.

Both are made in the two complete plants of an organization which for fifty years has specialized in the refining of 100% Pennsylvania Crude. The Bright stocks are refined in the Coraopolis plant and the Neutrals in the Freedom plant.

All the experience of fifty years has gone into FREEDOM 100% Pennsylvania Motor Oil. Sell it—fear no competition. Write for quotations. Deliveries available in tank cars, compartment tank cars, barrels, or drums.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

460-470 flash, minimum 85 Visc., low cold test Bright Stock (Sharples process).

FREEDOM 100% Pennsylvania Crude high flash Neutrals.

100% Pennsylvania Motor Oils, blended to your own specifications from FREEDOM 460-470 Bright Stock and FREEDOM 100% Pennsylvania Crude high flash Neutrals.

FREEDOM 600 Steam Refined.

FREEDOM filtered low end point Kerosene.

THE FREEDOM OIL WORKS COMPANY
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

have other motorists (their customers) "cussing" the oil company because a tank truck has obstructed their progress. Moreover, time is a valuable item with a big truck and its driver. Many such pieces of rolling stock operate 18 hours a day. It is often advisable to let them work in the outskirts of town in day time and in the busy section at night.

There are no 1000-gallon a day service stations in Birmingham or Atlanta. There are only a few in Chicago or St. Louis. However, in any good sized city there are some stations that will exceed 1000 gallons of throughput on special days, and storage has to be provided for emergencies. A 3000-gallon tank will take care of most service stations over a week-end, even if Monday should happen to be July 4.

Probably the growing popularity of the 3000-gallon tank is due to three kinds of demand. First, oil men who want to keep their trucks out of congestion in day time and serve down-town stations at night; second, oil men who want all their stations to have ample storage in order to avoid emergency calls for gasoline, and Sunday deliveries; and third, oil men who want to hook three 3000-gallon tanks together in a battery to make tank car storage.

A jobber in Georgia remarked recently that, "If an oil man has need to increase his bulk storage, it is nearly as cheap to install big tanks at filling stations (rural and city) as to enlarge the bulk storage at one concentrated point, and the big tanks at service stations carry additional advantages. Besides the cost per gallon of storage space is cheaper in big tanks than in small ones."

Auto Industry Notes

General Motors Corp. in March sold 220,391 cars to dealers who delivered 205,118 cars to consumers. The latter figure was a new high record for March, the company reported, and compares with 183,706 cars delivered in March, 1928.

Retail sales of other manufacturers have been large. Packard in March sold 5046 cars but produced only 4780. Hudson sold 12,295 Hudsons and Essexes in the week ended April 3 while output was only 10,450. In the preceding week Hudson sold at retail 10,801 cars against a production of 10,300.

Some manufacturers report their dealers stocks are lower now than at this season for several years. However, dealers' stocks as a whole are larger than a year ago.

* * *

Ford is not manufacturing more than 8000 cars a day and deliveries to users are reported to be keeping pace with production. Ford is continuing to increase his production rate.

Chevrolet in March produced more than 5000 trucks and cars each working day.

* * *

Total production of cars in the first quarter of 1929 was approximately 1,514,000, according to *Automotive Industries*. This indicates that production for 1929 will run between 5,000,000 and 6,000,000 unless the curtailment of output is larger than usual in the later months of the year.

Concerning the production over the remainder of the year, *Automotive Industries* this week said:

"Manufacturers have continued high production schedules well into April, feeling justified in view of sustained favorable sales reports from the field, but some decline may reasonably be expected before the second quarter is ended. It is considered practically certain that output in the third quarter of this year will drop behind that of the corresponding period last year, which was abnormally high."

Governors Boost Standard's Tourist Campaign

AN ADVERTISING campaign which will tie up with it the governors of seven states, has been launched by the Standard Oil Co. of New York.

"Seven Governors Plan the Nation's Vacation" is the title of the pale-green attractively illustrated booklet prepared by Batten, Barton, Durstine & Osborn, the Standard's advertising agency, to spread the fame of this campaign. The purpose of it is to interest motorists, both in and outside of New York state and New England, to visit the historical and interesting spots of that territory, and particularly to spend their summer vacations there.

A national hook-up of radio stations has been arranged during the weekly broadcasts of Soconyland sketches, during which the governors will extend a country-wide invitation to car owners to motor into this territory. This broadcasting will be supplemented by advertising in the Saturday Evening Post. Here is the schedule of radio dates upon which the various governors will be heard, and Saturday Evening Post insertion dates:

Gov. Gardiner of Maine: April 16, radio; April 20, S. E. P. Gov. Tobey of New Hampshire: April 23, radio; April 27, S. E. P. Gov. Weeks of Vermont: April 30, radio; May 4, S. E. P. Gov. Allen of Massachusetts: May 7, radio; May 11, S. E. P. Gov. Case of Rhode Island: May 14, radio; May 18, S. E. P. Gov. Trumbull of Connecticut: May 21, radio; May 25, S. E. P. Gov. Roosevelt of New York: May 28, radio; June 1, S. E. P.

THE SATURDAY EVENING POST

Motor up to MAINE this Summer

Governor Wm. Tudor Gardiner invites you

STANDARD OIL COMPANY OF NEW YORK

Advertisement featuring a message of welcome to Maine by Gov. Wm. Tudor Gardiner

What each state offers to the vacationer in the way of historical interest or recreation, from cloud-piercing, congested Manhattan to the pungent of pine woods of Maine, are told briefly in this booklet. A page spread is devoted to each of the seven states, wherein appears the respective governor's personal invitation to the motoring public to visit his state. This is signed in the governor's own handwriting. His photograph appears on both pages of the spread. Typical scenes from each state complete the illustrations.

Some 14,000 of these booklets will be distributed among the members of the New England Council, and every bank and hotel in New York and New England will have some on hand. In New York state, portfolios will be sent to chambers of commerce in various cities, to Rotary, Lions' and Women's Clubs. Enlargements of the advertisements will also be sent to these clubs, and each of the company's 30,000 service stations in its marketing territory will display the enlargements prominently in their windows.

MOTOR TRUCKS CAN *PULL* MORE THAN THEY CAN CARRY

This unit played an important part in a very unusual demonstration which recently took place in Cleveland, Ohio. An interesting story about this demonstration appeared in the April 24th issue of National Petroleum News on page 32. You'll find it well worth reading.

LOWER DELIVERY COST PER GALLON

THIS NEW type of low-cost transportation of gasoline and oil is rapidly being accepted by the larger as well as the smaller progressive companies in this country and abroad. They have been quick to realize the tremendous savings and operating advantages of the truck and Fruehauf Trailer method of hauling.

Smaller power units handle much larger loads when combined with Fruehauf Semi-Trailers. Not only are investment cost kept at especially low figures, but depreciation expense is cut to the minimum. For the average life of a Fruehauf Trailer is 10 years. And further, operating costs of the lighter truck and Fruehauf Semi-Trailer are the lowest possible —giving you *lower delivery cost per gallon.*

Short wheelbase of the truck and of the Fruehauf Semi-Trailer permit easy maneuvering at service stations—even to the most inaccessible fill pipe.

A special Oil Division is at your service, without cost to you. Let us survey your haulage problem and prove to you that the Fruehauf Trailer method of haulage will cut your delivery costs. May we send you further details?

OLDEST AND LARGEST MANUFACTURERS OF TRAILERS

Semi-Trailers, Four-Wheel Trailers, Adjustable Pole Trailers and Heavy-Duty Carryalls

FRUEHAUF TRAILER COMPANY

Branches and Distributors In All Principal Cities

10962 HARPER AVENUE : : : : DETROIT, MICHIGAN

Above: This trio developed the first undercut semi-trailer tank units for the White Star Refining Co., Detroit, and all attended the first national test of such units. Left to right they are: R. G. Handy, Whitehead & Kales, Detroit, formerly of the Wolverine Trailer Co.; W. E. Fletcher, Fruehauf Trailer Co., formerly with White Star Refining Co., and F. C. Buchanan, Columbian Steel Tank Co., Kansas City

Right: S. A. White, purchasing agent of the National Refining Co., Cleveland, who was the daddy of the country's first general test of the hill climbing ability of semi-trailer gasoline and oil delivery units. He was the ringmaster at the tests

Right: Left to right: Pat A. O'Connor, assistant to the president, General Motors Truck Co.; M. C. Dippel, Canfield Oil Co., Cleveland; W. B. Rayburn, Cleveland branch, General Motors Truck Co.; S. A. White, National Refining Co., Cleveland; E. G. Speh, White Co., Cleveland; Edward Rubley, Paragon Refining Co., Toledo, and A. W. Kennerson, Standard Oil Co. of Ohio, Cleveland

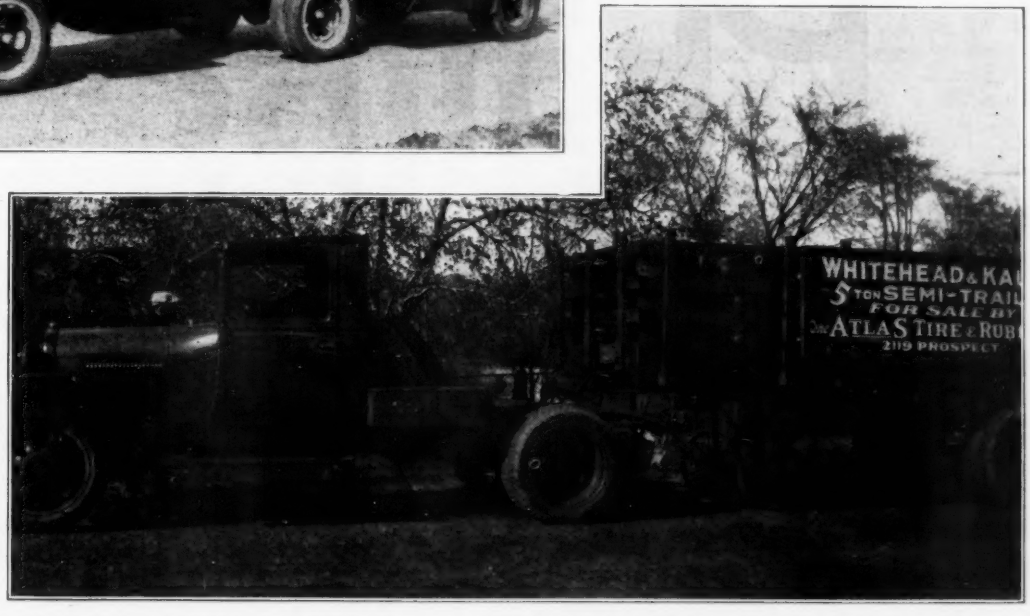
Model AA Ford 1½-ton truck tractor hauling a Fruehauf semi-trailer and Davis tank filled with gasoline in the test of the pulling ability of light tractor units

Views of Trucks and Trailers With Men Who Watched Hill Climbing Tests

Complete details of the hill climbing tests given six makes of truck tractors pulling two types of trailers at Gates Mill, O., were given on pages 32 to 34 in the April 24 issue of *National Petroleum News*.

H. L. Lowry of the Cleveland office of the Davis Welding & Mfg. Co., Cincinnati, spent part of the day taking movies of the hill pulling test of light truck tractor units, particularly of the Davis tank, which was mounted on a Fruehauf semi-trailer

Four-cylinder International truck tractor hauling a Whitehead & Kales-Columbian semi-trailer tank unit at the end of a 3700-foot climb up Cedar road hill



Model AA Ford 1½-ton truck tractor and Whitehead & Kales automatic stake trailer in the hill-climbing test for light tractor and semi-trailer delivery units. The trailer had aboard 21 steel drums of which 15 were filled with motor oil. Pay load was 7420 pounds. The picture was taken at the moment the tractor was disengaging from the trailer

SUCCESS GROWS when customers are loyal ...clinch yours!

"Good will is the disposition of the pleased customer to return to the place where he has been well treated" ● Phillips superior motor fuels multiply good will for the station that sells them ● They build up customer-loyalty—because they insure easy starting, quick acceleration, mileage and power ● Back of them is a vast, independent organization with a reputation for exacting standards of manufacture and fair treatment of its trade ● Sell Phillips Products—and watch your success grow

2824 Producing Wells; 2122 Tank Cars; 48 Gasoline Plants; over 5000 employees insure a permanent supply of Phillips superior motor fuels. These include Phillips 66, Phillips Benzo-Gas, Phillips straight run refinery gasoline 60-62 and Phillips wax free motor oils. The vast experience of the research department of the company is offered to jobbers and refiners on any problem of Controlled Volatility.....

Phillips 66

Phillips Petroleum Company

BARTLESVILLE, OKLAHOMA

NATURAL GASOLINE FOR CONTROLLED VOLATILITY

Facts on 1929 Gasoline Tank Car Market The Jobber Must Know

By Warren C. Platt
EDITOR

THE accompanying article is a study of the refinery gasoline markets as of today, showing their involved relationships to many of the consuming districts in the country, and consequently the several factors the jobber must be familiar with to do his purchasing in 1929 on a sound basis.

Compared with 1914, when the present era in the oil industry may be said to have started, and when the biggest share of the gasoline sold by jobbers over the country was bought in Oklahoma, there have been these important developments which affect a jobber's buying today:

1—In place of three refinery markets, as in 1914, there are nine in 1929. The West Texas refining district is the newest of these markets and is capable of great expansion. Because of its relatively low price for the crude on which its plants operate, its gasoline travels into consuming territory formerly supplied from other refining districts.

2—There is no noticeable tendency to enlarge present refineries located in what might be called the Chicago territory, or to build new plants to operate on crude received by pipe line, which may lead to this territory having its own price basis for gasoline tank car sales, instead of selling "F.O.B. Group Three" as at present.

There are other lesser important factors brought out which may affect materially, however, the conditions under which jobbers will purchase their gasoline supplies this year.

No individual, or publication, can tell the jobbers when and how to purchase their gasoline. The accompanying article does give facts concerning the wholesale gasoline market of today—1929—which will allow the jobber to use the soundest business judgment in making his own decisions.

THE oil marketer this year is confronted with more perplexities in planning the purchase of his supplies, particularly over any period of time, than ever before.

In years past the marketers of the vast Central West, which then, for the purpose of this discussion, extended from down in New York state and Pennsylvania west to the Rockies, and ran all the way from the Gulf to the Arctic Circle in Canada—in past years these marketers had a single major source of supply. That was the Mid-Continent field, then consisting of refineries in Oklahoma and some in Kansas.

Today—this year 1929—this Central West section has within narrower marketing borders five major refining groups and a number of smaller ones—from which the marketer draws his supplies. Two of these new groups are developing most rapidly, so that every month, almost, adds to their importance in the business. For more than a year now Oklahoma—Group 3—as a price making factor for the west, has exerted less influence and every indication is that its importance in this respect will grow less particularly if the present trend progresses.

In addition to increasing in number these refining groups have each their own freight rates to the different marketing points, and their gasolines are made from crudes which differ materially in character and price, the newest group—West Texas—having a crude just half in price that of the older fields.

Probably the development that will have the most lasting important effect is the construction of more refineries, that will supply the marketer, in the general district between East St. Louis, Ill., Chicago and Detroit, in fact even Toledo. With the building of more refineries in this district and which are planned now, the whole oil map will be materially changed.

A somewhat less important development, but one which the oil marketer buying his supplies must bear in mind, is the supplying of the lower cost crude oils to refineries in Ohio, Kentucky and Pennsylvania not only by pipe line from the West but also by pipe lines from the East. These latter lines will reverse their pumps and, instead of shoving western crude on East to the Atlantic coast, will pump Gulf coast, West Texas and South American crudes brought around by tank steamer, West to these inland points. One line is already operating in the reverse, so to speak pumping West Texas crude back from the Atlantic coast to Franklin, Pa., and others will be changed over in the early future, according to present plans.

The development of a new northern refining district is most helpful to the oil jobber because it brings his supplies right to his door, and puts him on an equality with the big companies. However, this development will make it necessary for the jobber to do some extra studying to keep his merchandise cost prices in line. A jobber may buy from one district one time and then a few months later, find that he will be able to buy cheaper from another district.

Each jobber will have to figure out for himself what he should do, for no one can know his business as well as he himself should. There will be no fool-proof price formula on the tank car market that the jobber can use and then go away and forget everything.

Each jobber will have to use, in regard to his purchases as well as the rest of his business, that thing which distinguishes good business men from poor, and the opportunity for exercising which is one of the great boons of business, and that thing is just plain business judgment.

TO EXERCISE sound judgment on his purchases a jobber, more now than ever before, will have to keep track each week of the crude oil and refinery development of the country and of new processes and of pipe line construction. He cannot, in this thinking and do justice to his business and stockholders, start his knowledge of the oil business with the tank car of gasoline as it is delivered on his siding.

He will have to know where the crude is produced from which that gasoline is made, the market conditions in that field and in other fields and he will have to know about refineries that are making his gasoline

and also that of other jobbers. In short, to be a successful business man in the oil marketing business, he will have to be a fairly well rounded out oil man.

All of this change has been going on most noticeably the past year but it has been recognized and analyzed by only a few in the oil business, marketers and refiners alike. It was this change which produced the phenomenon of Group 3, Oklahoma, tank car price on gasoline leading the prices of all other refining districts last year.

The trade would not believe that Group 3 prices could be different from other districts because the trade had blinded itself to the development of these other refining districts and to the other changes in refinery operations which have been taking place. Many in the trade are still shutting their eyes to the facts of 1929 and thinking of 1914.

HERE now are the facts a bit more in detail which show this change and the reasons therefore and what some of the future facts that the jobber will have to face may be:—

The present era in the oil industry starts back about 1914. In that year the number of automobiles in this country had mounted to a million—today they number 25 million. In that same year one of the greatest fields of high grade gasoline-content crude oil that the world has ever known reached the peak of its production in Oklahoma. It was the famous Cushing field and made as much as 330,000 barrels of oil a day, an amount which crashed crude oil prices down to 30 cents a barrel with few takers and sent the first of the millions of barrels of crude oil into big storage.

Refineries were built by the score in Oklahoma to run this crude. The cheap gasoline it produced, together with the tremendously rapid development of the automobile, brought thousands of men into the oil marketing business. In six months' time Oklahoma became the gasoline center of this country and even of the world, and most of this gasoline was sold on the open tank car market to jobbers.

A network of gasoline freight rates grew up to carry this gasoline from Oklahoma to the entire middle west, even as far east as the center of New York state. One can truthfully say that from no other point in this country or the world is there even today, such a detailed and extensive fabric of oil freight rates.

Many battles were fought over these rates before the Interstate Commerce Commission and state commissions until their development was finally achieved and they became firmly fixed in the freight tariffs of the railroads and the industrial life of the country. This big volume of oil business took railroads out of bankruptcy and made them the fine systems that you now find in the Southwest today.

In working out the complex rate problem offered by this new business the Interstate Commerce Commission finally grouped all the refineries in Oklahoma together and called them Group 3 and made most of the rates from all refining points in Oklahoma to most marketing points exactly the same. Then the Commission put the other refiners in various groups, those in Kansas in one, North Texas in another and the same for Louisiana and Arkansas, and gave each group rates above or below the Oklahoma refiners depending on which was nearer the particular marketing point.

All these other groups have been lost sight of by the industry as a whole and Group 3 has lived, not only because of its being the base for the fabric of freight rates in the West but also because for year after year it continued to find fresh pools of crude oil within or near its borders and continued to refine and force on the open tank car market to the jobber a preponderant portion of the gasoline supply of the middle west.

And all these years Group 3, or Oklahoma, continued to make the lowest priced gasoline in the country because every year, for a decade, it made more gasoline than it could sell. Consequently Group 3—the refiners in the state of Oklahoma—dominated and for the most part made the price of gasoline in tank cars for the whole country.

It had the lowest price and a big quantity of goods to sell at that price, and it never could sell all it made even at that price, so, naturally, and economically, the whole industry even in foreign countries turned to Group 3 for the price on gasoline. There were other contributing factors, but the above are the chief fundamental ones.

One of the most important of the other contributing factors was the terrible ignorance of the industry, even of its leaders, on the basic economics of a market. But however that may be, Group 3 refiners made the gasoline market for years.

While refiners in Group 3 were thus struggling uneconomically to make a profit and all the time were doing havoc to the whole industry, new fields of crude oil were developed and other groups of refiners grew up around them. These additional supplies of crude and gasoline were needed by the country with the continuing big increase in the number of automobiles each year, but in later years these newer fields and refining districts kept taking a greater percentage of the increased gasoline business than the Oklahoma refiners did—taking it away from the Oklahoma refiners. This whittling down of the importance of the Oklahoma refiners was gradual but steady nevertheless.

One of the chief reasons why it was not appreciated by the industry was, because of the early importance of Group 3 as a maker of the price, and also, because of the wonderful system of freight rates running out of Group 3, rates which were known by every marketer over the country, these newer refining districts quoted their prices on a Group 3 basis. That is, these refiners outside of Oklahoma figured a price on their gasoline F.O.B. their own refinery, added the freight rate from that refinery to the jobber who was buying and then from that delivered price, deducted the freight rate from Group 3 to the same jobber and quoted that jobber what was left, which was this refiner's price F.O.B. Group 3.

THIS saved the jobber much arithmetic and having to inform himself on freight rates from the different refining centers and it permitted him to compare at once all tank car prices of gasoline. This system of basing prices was carried so far that even today jobbers in Ohio will buy from refiners in Kentucky on a Group 3 basis, and jobbers in Michigan will buy from refiners at Toledo or East Chicago, or East St. Louis on a Group 3 freight basis.

There is no other one thing that has so misled the industry as to the declining importance of Oklahoma's output of gasoline and the rising importance of the volume of gasoline

How Present Refinery Markets Rank

Tank car markets differ in importance according to their gasoline production offered on the open market (being gasoline made other than for the refiners' own stations) and the capacity of a district to produce gasoline. At present these refinery tank car markets rank as follows:

	Capacity (Barrels)	
	1929	Jan. 1, '28
Oklahoma	284,000	264,000
No. & Cent. Tex.	155,000	150,000
Kansas	136,000	139,000
West Texas.....	106,000	26,000
No. La.-Ark.....	100,000	76,000

Note this coming and big growth of West Texas operating for most of its life on a crude that cost still less in relation to Oklahoma crude than it now does.

made by refiners in other states, as this habit of basing all prices for gasoline on Group 3. It has blinded thousands of oil men just as completely as if a handkerchief were tied over their eyes and they were never permitted to see the coming of the electric street car, the elevated, the subway and the automobile.

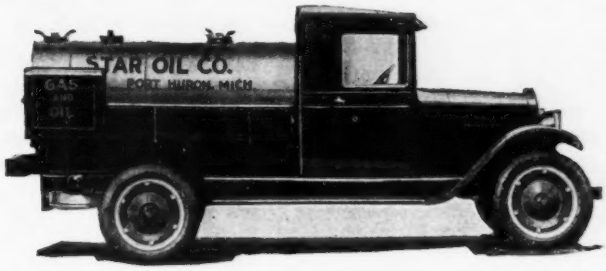
There is nothing wrong, either morally, from a business standpoint or economically, in an industry using a common basing point for its prices. Other industries do it. For years the steel industry based all its prices on Pittsburgh. Even long after the big mills were built at Gary, Ind., steel was sold from Gary to points west and the price figured F.O.B. Pittsburgh freight basis. That became too unwieldy in the steel business and other basing points came into use.

A COMMON basing point is a convenient thing to have but every man using it should do so intelligently, should not let that practice blind him to the facts as to the real source of his goods and what is going on at that source.

It is surprising how able oil men still keep the handkerchief over their eyes even today. We continually have oil men give us prices that are lower than those of the Group 3 refiners, yet, because they are based on Group 3 these oil men insist that the gasoline is being made by Oklahoma refiners and will be shipped from their plants in that state. Whereas, by dint of hard questioning, we will develop the fact that the gasoline is being made at Toledo, O., or East Chicago, or East St. Louis, in Louisiana, West Texas or some other point hundreds of miles away from Oklahoma.

Hundreds of jobbers believe that any price given them by the Shell Petroleum Corp., for instance, is on gasoline to be shipped from Oklahoma and sometimes we have a hard job convincing those men that the Shell interests have no refinery in Oklahoma and never did have and undoubtedly never will and that to northern points they are shipping exclusively from their refineries that are nearby at East Chicago and East St. Louis, otherwise from Kansas.

Complaints also have been received by refiners from jobbers where the refiner sold the jobber quoting the price on Group 3 and the refiner's billing department billed F.O.B. the refinery from which shipment was made. It has taken much explaining and arguing to convince the jobber that 9 cents one point might easily be the same in money to him as 6.50 cents Group 3. Undoubtedly in the future more goods will be quoted



FOR THE NEW CHEVROLET TRUCK

For larger loads at less delivery cost the Little Giant-Chevrolet offers most for your money

Because Little Giant is lighter in weight you can add more tank capacity without danger of overloading. Little Giant keeps the load low with eighty-five percent of the weight bearing on the rear axle. The center of gravity never shifts. There is no side thrust. That means there is no undue depreciation of the tank or truck. For low delivery cost, the Little Giant-Chevrolet is unsurpassed. *Ask for descriptive circular showing the profit making advantages of this combination.*

Steinke Bros. Mfg. Co., Inc.
200 CAROLINE ST. PEORIA, ILL.

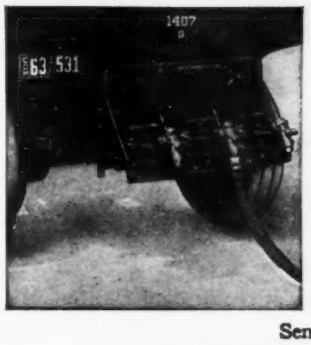
LITTLE GIANT TRUCK TANKS

Gasoline And Other Motor Fuels

by Ellis and Meigs, is a book which gives a complete survey of the field and a discription of practically every process of making gasoline and most other motor fuels of promise or prominence.

The price of the book is $10. Just send us your check and we will mail a copy of it to you.

National Petroleum News, 1213 W. Third St., Cleveland, Ohio



GRANBERG PETROLEUM METERS
give precise measurements of
Petroleum Products

GRANBERG METERS installed on TANK TRUCKS provide a simple and accurate method of truck accounting by maintaining a continuous mechanical record of deliveries.

GRANBERG PETROLEUM METERS on tank trucks record accurate deliveries to the complete satisfaction of Customer and Oil Company.

Send for our literature.

GRANBERG METER CORPORATION
"Precision Meters for Petroleum Oils."
79 New Montgomery St. San Francisco, Calif

F.O.B. their point of shipment, than F.O.B. Group 3.

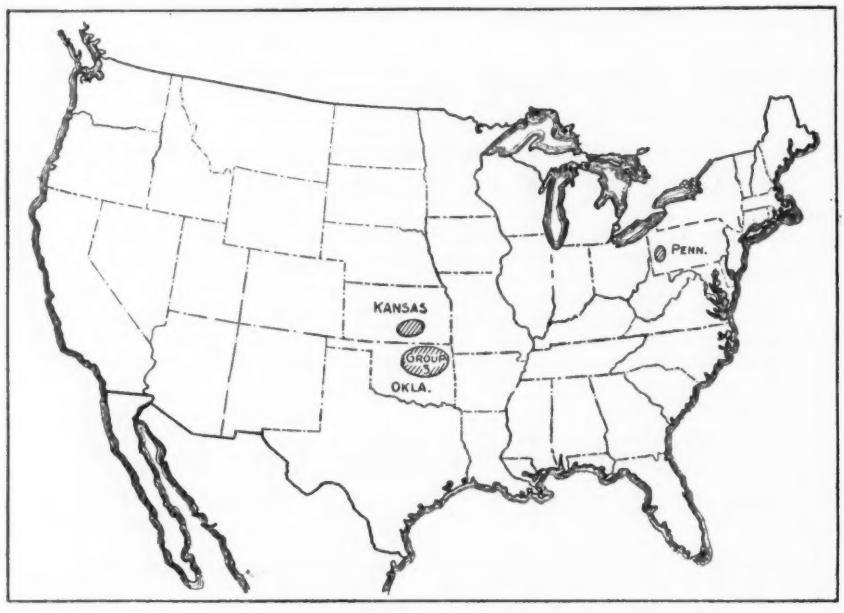
While Oklahoma was ruling as the gasoline price king of the world, other states brought in big oil fields, particularly Texas. It has a number of major fields but the greatest of all time and of all fields is the so-called West Texas field, which lies to the east and north of El Paso, Texas, and covers a probable producing area as large as the state of Iowa.

This field started in big two years ago and it now can produce from existing wells as much as the rest of the United States. In fact for a short time it is estimated it can produce three times as much as the whole country but its production is being held back and drilling of new wells restricted as much as possible.

The jobber cannot over-estimate the importance of this field. While the crude it produces has a great deal of sulfur in it, modern refinery methods now being used there are overcoming that. The field is third in the production of oil in the United States. The market price for the crude is but 65 cents, only half that of other Mid Continent fields from which most other refiners have to take their crude supply, including the Oklahoma refiners.

The field's refining district lies a shade less than a half a cent a gallon in freight rates further away from the same northern markets that are reached by Oklahoma refiners from Group 3. In other words a 6.50 cent price Group 3, by a West Texas refiner nets him back 6 cents at his refinery but he is saving more than that by paying only 65 cents a barrel for his crude against $1.20 by the Oklahoma refiner.

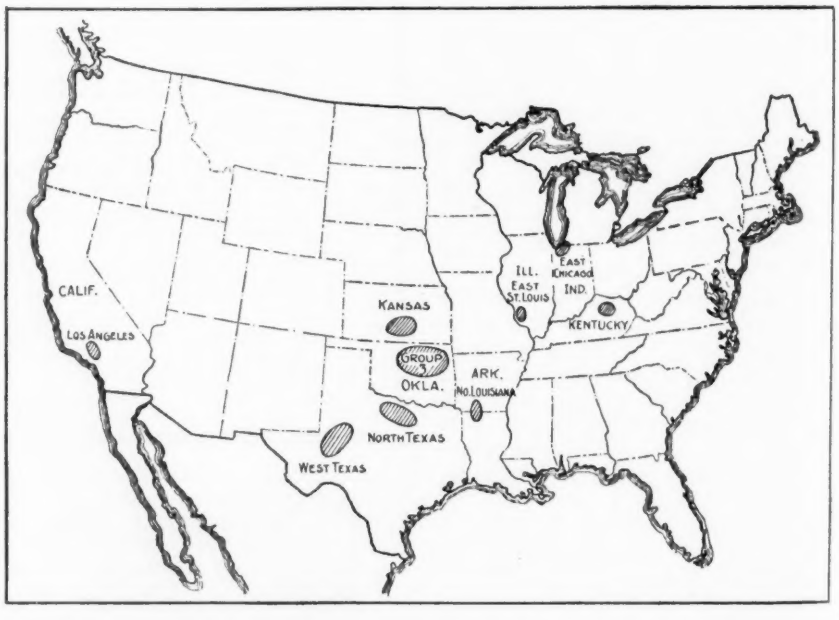
There was consumed of West Texas oil last year more than 100,000,000 barrels as against 283,000,000 barrels of Oklahoma-Kansas crude and 230,000,000 barrels of California crude.



In 1914 *there were three tank car gasoline markets*

But this is only the general picture for the entire country. The jobber in the Middle West must cut the picture down more to his own territory. In doing that he will find that refineries in the interior of the U. S. last year consumed 196 million barrels of Oklahoma-Kansas crude, 39 million barrels of Texas light oil (other than West Texas oil), 35 million barrels of Eastern oil (Pennsylvania largely) 36 million barrels of Rocky Mountain oil and 25 million barrels of West Texas oil from this vast new field. In other words, this new Texas wonder was fifth in importance in point of supply in inland refineries; still it was almost twice as great as the old Louisiana-Arkansas fields. However, this year (1929) West Texas will be second in importance in supply of crude to interior refineries, its estimated consumption at interior plants being jumped to 39 million barrels, ahead of all other crudes except Oklahoma-Kansas.

This estimate is, if anything, low because, as long as West Texas crude stays so much lower in price than other crude, every refining district will make an effort to run some of it at least, even though there are many problems to introducing West Texas crude in existing plants. If the officials of the state of Texas, who are cooperating with the oil companies there to hold back the development of this West Texas field until the markets require it, are reasonably successful, it is possible then that the price of that crude will be raised putting it on a parity with other crudes in which event this new



In 1929 *there are nine tank car gasoline markets, most of them competing for business in the middle western distributing territory*

This year, it is estimated, there will be less Oklahoma and California crude consumed—not because there is not going to be more of it but because its production will be restricted for market reasons. However there will be 30,000,000 barrels more West Texas crude consumed.

Texas field will not demoralize the tank car markets of the country as much as it threatens to right now.

A new refinery district has developed almost over night right in the heart of this new West Texas field. Near the close of 1927 there were only half a dozen small refineries in the field, making an indifferent gasoline which mostly went off color. Various companies and individual interests have rushed up new and modern refineries there so that today there are 22 plants running and within the next few months there will be 25 with two or three more starting up in the late summer or fall.

THESE plants that are running this spring have a total capacity of about 130,000 barrels a day of crude, with some 40,000 barrels a day of cracking capacity. These new plants are all up-to-date, well built, run by competent refinery men and make good quality products.

This last Fall and Winter half of the gasoline made by these West Texas plants was being sold on the open tank car market to jobbers in Standard of Indiana and Ohio territories. Even as early as last September that meant nearly 800 cars a month of gasoline that came north right through Oklahoma and Kansas and into the territory which up to that time had been taken care of by other refinery groups. That is not much gasoline as the country's consumption goes but it is a third of the total spot sales to jobbers made by Oklahoma refiners in September.

This brings us up to how refinery operating policy can and does affect the tank car market and why the Oklahoma refinery (Group 3) price was above the prices of other refining districts when the demand started dropping in September.

Oklahoma refiners were the first to appreciate the existence and the importance of an open tank car market and what it meant economically in the oil business. In years past when that market was down, these refiners observed that the Standard companies did not reduce their tank wagon prices so as always to maintain only a reasonable margin between delivered tank car price and tank wagon price. Therefore excessively wide margins came which brought a lot of new competition into the oil business, put the state of South Dakota into the oil marketing business and produced an excessive amount of price cutting by oil marketers everywhere.

Oklahoma refiners were the first to collect weekly figures from their own number on the amount of gasoline and other products they made and

This One Pump Did 40%

of the week's total business

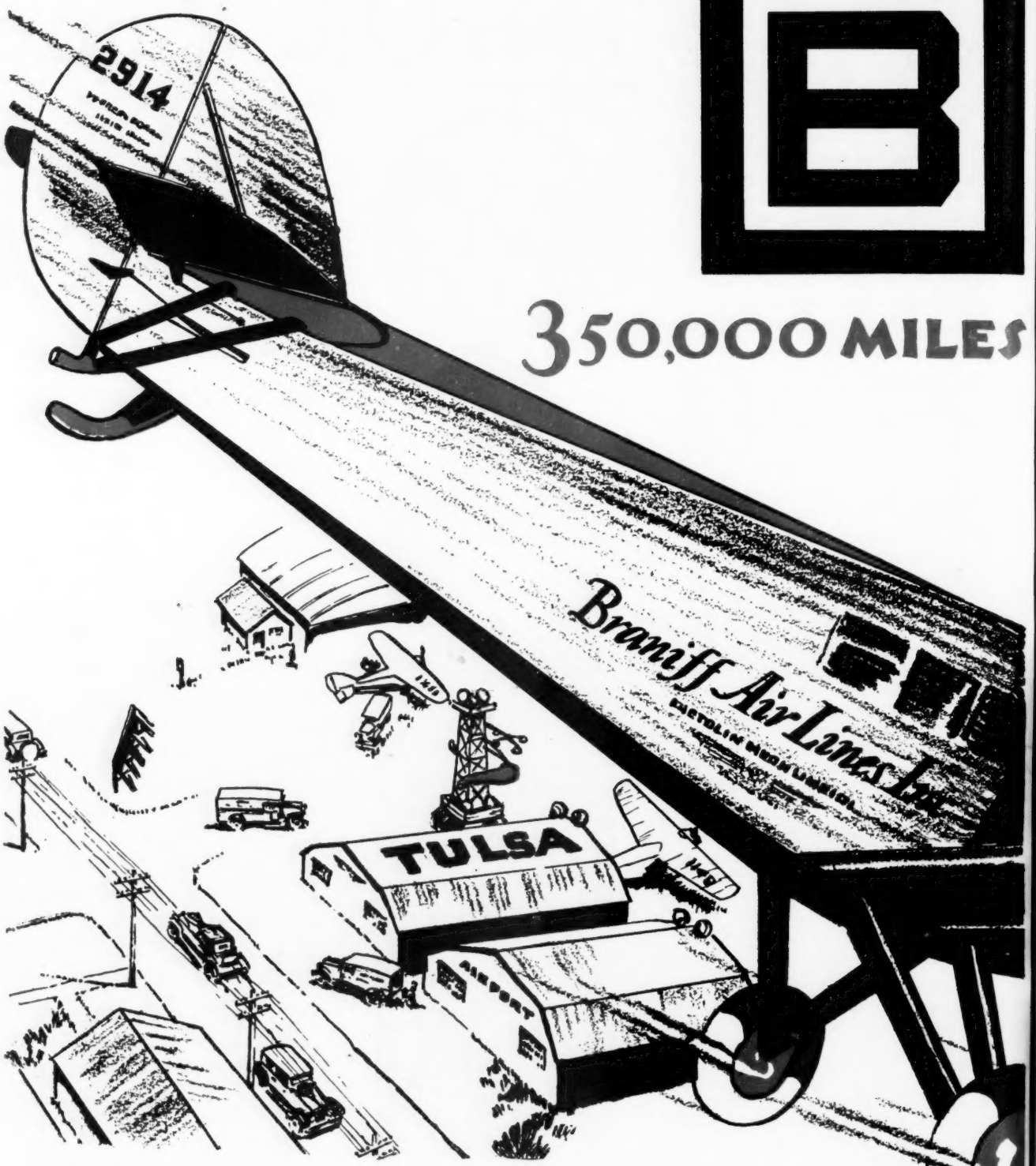
Years and dollars spent in perfecting the Pen-om-eter, an entirely different meter pump — were proven well spent. Placed in the worst location of a gasoline station, in four weeks this pump was dispensing 40% of the total gallonage. Attendants and public alike were quick to recognize its speed and accuracy. They were attracted by its appearance, operating silence and ease of handling.

Performance made possible by *new* engineering and construction has earned recognition also from the "big" companies who insist their pump investments not only save but *make* them money.

Complete specifications sent on request.

Pennsylvania Pump Co., Inc.
Pittsburgh, Pa.
U. S. A.

SUPER-AVIATION



350,000 MILES

The World's

Refineries: BARNSDALL OKMULGEE WICHITA

Sales Offices: TULSA CHICAGO NEW YORK ST. LOUIS
KANSAS CITY ST. PAUL LOS ANGELES

OIL BE SQUARE MOTOR OIL

TRIPLE PROVEN

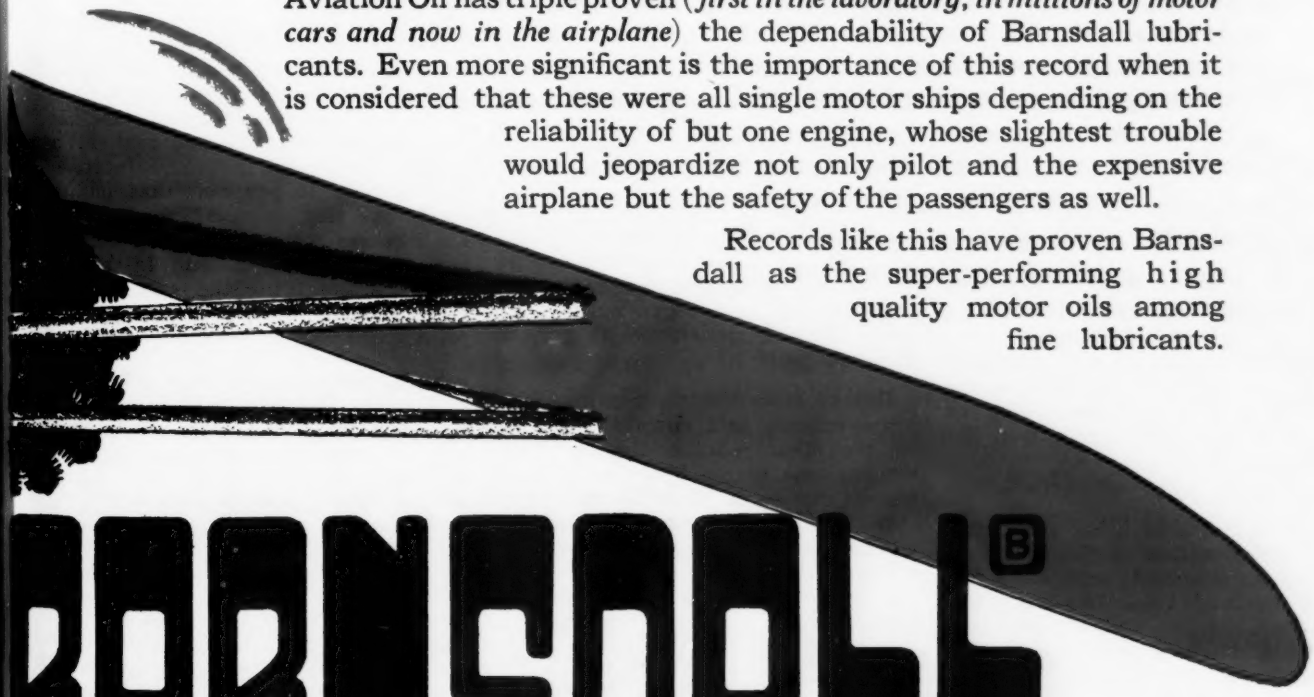
Lubricants for motor cars and aeroplanes

Carrying over 4,000 *passengers*

WITHOUT ACCIDENT

SUCH is the remarkable record of the Tulsa-Oklahoma City division of Braniff Airlines, Inc. With engines that roar out their steady even drone of power that spells safety, Barnsdall Super-Aviation Oil has triple proven (*first in the laboratory, in millions of motor cars and now in the airplane*) the dependability of Barnsdall lubricants. Even more significant is the importance of this record when it is considered that these were all single motor ships depending on the reliability of but one engine, whose slightest trouble would jeopardize not only pilot and the expensive airplane but the safety of the passengers as well.

Records like this have proven Barnsdall as the super-performing high quality motor oils among fine lubricants.



BARNSDALL®

FIRST* *Refiner*

* *In 1860, almost 70 years ago, William Barnsdall, father of T. N. Barnsdall the founder of* BARNSDALL *established the world's first oil refinery.*

the amount they shipped. With these figures these refiners at once saw that as their stocks increased the prices went down. When the stocks decreased the prices went up on this tank car market. So by dint of much careful figuring each of these refiners undertook to run his plant so as not to accumulate such stocks as sent the price down to a losing point.

There was nothing mysterious or secret about this. They made use of figures which are public to every one, and some of them are provided by the government itself. There was nothing illegal about it. It was the application of common sense to business that the government departments providing statistics for farmers and business alike have been urging on both farmers and business men for a score of years.

IT TOOK time to bring about sufficient education of the Oklahoma and Kansas refiners to have any effect on the market but the time finally arrived and, by the end of 1927, the Oklahoma refiners found that they had made less gasoline than they had shipped. Their stocks were less and they went into 1928 with confidence of a better price. All during 1928 these refiners as individuals kept holding down their runs so that no unnecessary stocks of gasoline were accumulated, and they were the only important refining district to do that. Up to September 1st Oklahoma-Kansas refiners were right down to the bottom of their tanks on gasoline storage and they were the only refining group in that condition.

The result was that as the season's demand grew the price of the Oklahoma-Kansas refiners began to lead all other refining districts and to climb steadily to a top price the fore part of September of 9.75 cents per gallon, one of the best prices in years, price of crude oil considered.

While this bull market was on all the other refining districts followed the Oklahoma refiners' price up, in fact almost overbid the Oklahoma refiners at times. When the demand began to fall off in September the other refining districts, which had increased their runs of crude oil materially during the summer, found themselves accumulating gasoline so that they at once began cutting the price of Oklahoma refiners to get the business.

Instead of cutting their price Oklahoma refiners held down their runs, let the other refining districts have the business at the lower prices and stored the extra gasoline that they could not sell. The result was that all Fall and Winter the market declined, being led by the other refining groups, with the Oklahoma refiners lagging behind in the drop.

All of this is clearly shown by the following table, which should be read in connection with the fact that the increase in domestic gasoline demand last year was but 10.5 per cent, a fact which was quite accurately predicted by many authorities at the opening of the year:

Refineries	Increases in 1928 over 1927 Gasoline made	Gasoline shipped
Oklahoma-Kansas	10.0%	8.5%
Texas Inland (Including W. Tex.)	23.4%	24.8%
Indiana-Illinois	27.5%	22.7%
Louisiana-Arkansas	29.3%	27.6%

Had all the other refining districts operated on the same policy as the Oklahoma refiners a higher price would have obtained in the tank car market through the Fall and Winter and to the present time than has been in effect.

Here is the fundamental principle of economics that the whole oil industry must learn to operate on if it would have stable profits and that is that there is only a limited increase each year in gasoline gallonage, an increase over which the oil industry has no control.

There is nothing the industry can do in any reasonable time to increase or decrease that demand. Therefore the industry should measure that increase in advance, which it very easily can do from all the statistics of gasoline consumption and motor car manufacture and then keep its operations down so that the increase is supplied and no more. If more than the increase is manufactured or sought to be distributed in any one year, prices will drop to unnecessarily and unprofitably low levels.

THE same principle applies to distribution of gasoline. If jobbers seek to distribute 15 per cent more gasoline in a town or state in a year when that town or state enjoys only a 10 per cent increase in gallonage, there will most certainly be low prices. Or if one jobber seeks to increase his gasoline gallonage 25 per cent in a district where the natural increase will be only 10 per cent that jobber must take that extra 15 per cent of his increase away from his competitors or be disappointed. In either event he will bring the prices down and his costs up to an unprofitable point.

Being ambitious in the oil business is all right if one is able to put his competitor down on his back and take his business away from him and make him like it, all the time being able to keep prices up.

All the foregoing theory of practical economics has at last appealed to the leaders of the oil industry and they are now discussing it to the end that each may intelligently plan his operations so that the whole industry will not be upset by some company that thinks there is going to be a 25 per cent increase in business this year when there is not. The increase in domestic consumption probably won't be any more than last year—and that was 10 per cent.

However, the fact that this theory of operations is being discussed is no proof that it will be put into operation by all refining groups. The jobber will have to be the judge as the year proceeds. A refining district that is continually offering a lower price, a jobber can safely figure, is one that is overproducing its market, or

Factors Making Up Tank Car Markets

Tank car markets differ according to:

A—Crude oils and their price to the refiner.

B—Freight rates to the comsumer.

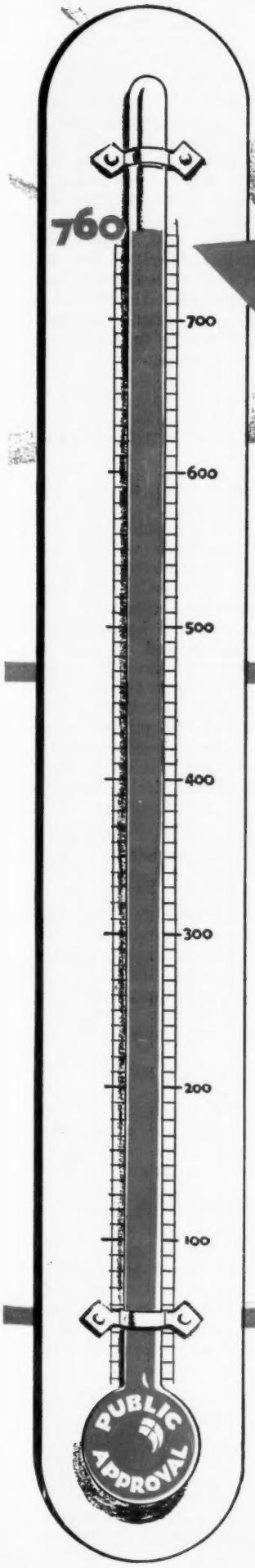
These factors are:

Refining Group	Posted price at well per bbl.	Main line pipeage cents per gal.	Gasoline freight rate to Chicago cents per gal.
Oklahoma (Group 3)	$1.20*	.....	2.376
Kansas	1.20	.....	2.376
No. Texas	1.20	.....	2.541
West Texas	.65	.....	2.640 to 2.739
No. La.-Ark.	.945†	.....	2.376
East St. Louis	1.20	57.25	1.155
East Chicago	1.20	66	.....
East Chicago (West Tex. crude)	.65	‡.....	.....

*36-36.9 gravity crude.

†Half 18-20 gravity Smackover at 75 cents, and half 34-34.9 gravity crude at $1.14 per barrel.

‡No through tariff published.



Warming Up!

Public Acceptance Exceeds all Expectations

DIAMOND 760 MOTOR OIL

Are you profiting by the success of this new heat-resisting 760° Motor Oil?

DIAMOND 760 Motor Oil is the first on the market to meet all the requirements of the modern, high speed motor. It "stands up" at temperatures as high as 760° F.— furnishes any motor with a wide margin of safety. DIAMOND 760 is an "evaporation-less", selected 100% pure paraffin base lubricant.

Sales are mounting but much desirable territory is still open. Mail the coupon at once to find out if the liberal Diamond franchise is available in your community. You will be backed to the limit with advertising and sales aids.

MID-CONTINENT PETROLEUM CORPORATION

General Offices: **Cosden Bldg., Tulsa, Oklahoma**

Chicago **Kansas City** **St. Louis** **Tulsa** **Waterloo**

Here's the Key to the *new* "DIAMOND 760" Profits!

Mid-Continent Petroleum Corporation N. P. N.
Cosden Bldg., Tulsa, Okla.

Gentlemen: Please send me full particulars about your DIAMOND 760 Motor Oil franchise.

Name_____

Address _____

Town_____ State_____

to state it another way, it is trying to extend its last year's market and take away some other refining district's territory and business. A district, or the districts that have the higher prices, will be those that hold to a saner plan of operations and are willing to give up a little business in order to get price.

The big thing for the trade to appreciate is that each of these refining districts are separate, they differ by geographical location and by the kind of crude run. One district may increase its output of gasoline and another may decrease it; one district may get a better fuel oil price by reason of location of big customers, than another; the fundamental thing is that these districts are different and separate and each operates by itself.

What one does the other does not have to do unless it wants to. They may all sell their gasoline on a Group 3 price basis, but that does not mean that they must sell it at the same price, nor that the Oklahoma refiners, whose freight rates are used as a handy means of figuring prices, must nor should meet the prices of other refining districts who base on Group 3. The Oklahoma refiners can ignore the other districts' prices or meet them, to the extent that they want to sell much or little gasoline.

This independence of action is also made possible by the fact that it is not physically possible for any one or two of the refining districts to supply all the demand for gasoline. An output from all of the districts is needed. So that if one refining district sells at a low price the other districts know that all they have to do to get a better price is to let that low-price district sell out, then there won't be any more of that low price on the market and the others can get a better price.

This is elemental economics that the oil industry persists in disregarding. The thought seems to be in the minds of many buyers that a low price by one refiner or by one refining group means that all other refiners and all other groups must at once sell at that low price, yet the same jobbers would not think of meeting all over their territory the cut price made by a single pump doing little gallonage, because those jobbers know that the one pump can sell but a limited quantity of gasoline.

What the Oklahoma refiners have done since last September in regard to the low price gasoline from West Texas is to let the West Texas refiners sell their output knowing that when that was sold the low prices were off the market. However, as the Fall and Winter progressed, other refining groups that had overproduced their natural markets, as the figures above showed, got down to competing with the West Texas refiners but the Oklahoma men still refused to fight on the real low price basis, preferring to pass up the business.

But this year—1929—with the refining capacity of the West Texas refiners much increased and with them still enjoying a lower priced crude, they are a much more important element in the price structure. Already they have taken enough business, along with some other refining districts, so that the northern refining group has at times met their prices.

It is estimated that a refinery located at Chicago and getting its crude all the way from the Mid-Continent by pipe line has an advantage of about a cent a gallon saving because of this pipe line transportation, over gasoline which is shipped to Chicago by rail from Oklahoma. These northern refineries for some time now have been giving away, through the medium of a lower price, part of this penny saving and in Detroit, where Toledo refineries have been hotly competing for business, northern plants have given away almost the whole cent. If the price war at Detroit gets settled, then the northern refineries will probably get back nearer the prices of the Mid-Continent and other southwest refineries. However, the tendency will be, as the number of plants up north increases, to slowly give away some of this pipe line saving.

How the Trade Must Use a Price Reporting Service

BECAUSE each of these refining groups is a power unto itself it is impossible for any price reporting medium like NATIONAL PETROLEUM NEWS or *Platt's Oilgram* to assemble the prices of all the groups into one price, as some people have suggested. Such a price would not mean anything because no refining district would use it. Each district would still have its own price. While prices from all districts competing for business at one specific point in a marketing territory will be substantially the same over any period of time, nevertheless each refining district has certain points to which it can ship at a saving in freight over that enjoyed by any other district. These points represent considerable gallonage to each district and consequently they serve to tone up the price over that to be obtained at highly competitive points.

All any price reporting medium can do is to give the buyers all the facts and let them use them as they best can and as they see fit. This is like the manufacturer of carpenter's tools. All the manufacturer can do is to make the tools; it is up to the carpenter how to use them. If the carpenter spoils a job with a perfectly good chisel it is not the fault of the maker of the chisel. If the carpenter hits his thumb with the hammer it cannot be blamed on the man who made the hammer.

And the same can be said as to information on markets and prices. When there was but one source of gasoline supply back in 1914—Oklahoma—the price reporting mediums—then only NATIONAL PETROLEUM NEWS—showed that price. When Louisiana and Arkansas got into the market, their prices were added; the same was true as to north Texas, and now as to West Texas and the refineries up north, as well as the many other places over the country where tank car markets exist.

When a jobber should use this price and when not, he alone can and should determine just as the publishers of oil papers have to decide whether they will buy their paper stock this time from Maine, from Canada, from Michigan or Wisconsin, or some other paper center. Prices between these centers will differ and perhaps one center will be more advantageous to purchase in one time than another. All the paper price reporting mediums can do is to tell the publishers and printers what the prices are at these various points, then it is up to the individual publisher to decide where he wants to buy.

The statement has been made a number of times that the adoption of the "weighted average" for showing U. S. Motor gasoline price in Group 3, first being adopted by NATIONAL PETROLEUM NEWS and *The Oilgram* and later by another publication, was responsible for the Group 3 price of Oklahoma refiners advancing the past year and holding above the price of the other refining districts since September.

THE weighted average is simply a method of figuring actual prices and has nothing to do with whether the price goes up or down. If the old method of showing the prices by the "high and low" had been in effect the past year or more, the result would have been the same—the only difference would have been a small fraction of a cent at most—that being the error between taking the simple average—which is less accurate—and taking the weighted average of prices, which is absolutely accurate.

The weighted average just happened to go into effect the year that the Oklahoma refiners used the most intelligence in operating their business, as has been outlined in this discussion. If the buyer did not understand that operating policy and the other fundamental factors that affect the tank

car market, then he would have been just as much at sea if the price had been stated on the "high and low" as on the weighted average.

The story of the weighted average has been told many times but it may be well to repeat it again, in brief.

The old way of gathering and publishing price information on the tank car market was for price news gatherers, who with NATIONAL PETROLEUM NEWS and *The Oilgram*, do nothing else but work on prices, to call up as many refiners, brokers and jobber buyers as possible in a day and stop in the offices of as many of them as possible and get whatever information they would give as to what prices he was selling or buying at. Then at the close of the day these reporters would sit down and study all the dope they had gathered and decide as to what they THOUGHT was the price, or prices, at which the bulk of the goods were moving.

This system was accurate enough as a general guide to the market but it was not accurate or fool-proof enough when millions of gallons a week of petroleum products had their prices based upon these published prices. A reporter might be sick and a substitute have to take his place for a day or two, or weather, trouble with the telephone service, or indifference might prevent getting around to all the sources of information in a day—in fact the sources were increasing so rapidly that it was practically impossible to see all of them each day—and the result might easily be an inaccurate price, and a slight inaccuracy would mean a great deal of money when multiplied by a few million gallons.

So NATIONAL PETROLEUM NEWS and *The Oilgram* arranged first with the Oklahoma refiners, because their district was the most important, for each refiner to send to the Tulsa office of those publications at the close of business each day a detailed statement of all gasoline sales for the day and the price and quantity in cars on each sale, together with the specifications of the goods.

THESE statements are signed by an officer of the reporting company or some one designated by the company to certify that the report is true and covers all sales. From these reports we sort out gasolines of a given grade and sales of each class and from those figures work up the weighted average of each grade for the open spot market sales. The refiners were glad to send in these reports and at the present time they represent all but a few per cent of the refining capacity of Oklahoma and Kansas which makes and sells anything at all on the open market, a greater coverage of the market than was possible under the old system.

Coupled with these reports is the understanding between each refiner and NATIONAL PETROLEUM NEWS and *The Oilgram* that, at any time the publisher sees fit and without notice to the refiners, representatives of the publisher can inspect and check anything and everything in a refiner's office which in the opinion of the publisher may have any bearing on the truth or falsity of the refiner's statements to the publisher.

THIS privilege is exercised every few months with every refiner. In no office has the publisher or his representative been denied access to a single file, to a single book, to a single piece of paper that he has called for. Sales have even been checked through the customer's ledger and into the cash book. Contract files have been checked. Correspondence and telegrams have been read—all to the end of making sure that the truth has been told and of permitting the publisher to assure the industry that he has exercised every human means possible to make certain that the facts are given. Jobbers, have also cooperated in many of these check-ups, with their files.

The writer is glad to say that at no time, despite all the checking and counter checking that we have done, despite all the intimate and confidential details of the business of the refiners that we have searched, have we found any evidence, not the slightest evidence, of any false statements in these reports. And the writer is also most glad to say that on every check, every refiner and every employe has done everything that we could think of to expedite the check-up.

When the reader bears in mind that this is letting outsiders see into the most confidential part of a business, without let or hindrance, he will realize the desire of the refiners to give the industry the pure facts as regards their sales. This is certainly full proof of the present day policy of business, and of the oil business, to put all its cards face up on the table. It has been one of the most remarkable experiences of the openness of business that the writer has ever heard of.

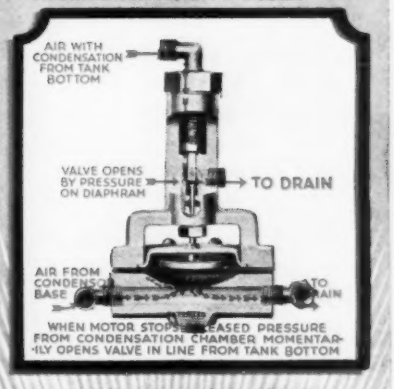
When these sales reports were running smoothly in Oklahoma they were started in Kansas and now they are being worked up in other refining districts.

The fact that the refiners are thus cooperating so thoroughly and that other groups are starting the sales reports is most interesting in view of the fact that NATIONAL PETROLEUM NEWS and *The Oilgram* have reported the lowest prices of any reporting medium, both at Tulsa and at Chicago. Take the market for the three months of December, January and February of this year, a time when the prices

NOW there is no excuse for clogged air lines!

No longer need sediment and condensation take their toll of air compressors' efficiency. The patented, exclusive ECO-MATIC Tank Drainer, with which all ECO Compressors are equipped forever removes these twin destroyers. Through positive, automatic, continuous drainage it eliminates every trace of sediment and moisture from the storage tank—assures clean, dry air in every inch of pipe line at all times and trouble-free operation of all your air equipment under all weather conditions.

SERVICE STATION EQUIPMENT CO., LTD., TORONTO 2, CANADA.
REPUBLIC STEEL PACKAGE CO. of CALIFORNIA, RICHMOND, CALIF.
BENNETT EXPORT CORPORATION, 32 BROADWAY, NEW YORK.


AIR WITH CONDENSATION FROM TANK BOTTOM
VALVE OPENS BY PRESSURE ON DIAPHRAM
TO DRAIN
AIR FROM CONDENSER BASE
WHEN MOTOR STOPS RELEASED PRESSURE FROM CONDENSATION CHAMBER MOMENTARILY OPENS VALVE IN LINE FROM TANK BOTTOM

ECO-MATIC PATENTED TANK DRAINER

The "most valuable air compressor improvement in years" is something you won't care to pass up.

Write for Compressor Bulletins!

Service Station Equipment Company
Precision Made ECO Automotive Servicing Equipment
Bryan, Ohio, U. S. A.

have been most ragged and the Oklahoma refiners have been steadily above all other groups, the *Oilgram* has shown the lowest price for Oklahoma refiners, an average for the period of 7.7857 cents per gallon; NATIONAL PETROLEUM NEWS has been next above it, due to the fact that it reports the price for Monday of each week only and Monday's prices happened to run higher than prices later in the week with 7.8767 cents per gallon, while the *Oil and Gas Journal* of Tulsa averaged for the same period 7.8454 cents per gallon. The following table shows the detail of this comparison by weeks:

Comparison of U. S. Motor Tank Car Prices F.O.B. Group No. 3

OILGRAM (Simple average of each day's weighted average for each week as indicated)		N.P.N. (Weighted average for Monday as shown in each issue)		O.&G.J. (A weighted average arrived at by O.&G.J. for Monday of each week)
Dec. 3-8	9.0088	Dec. 3	9.0680	9.13
10-15	8.6746	10	8.7976	8.74
17-22	8.5329	17	8.6250	8.71
24-29	8.4143	24	8.5074	8.7
31-Jan. 5	8.0166	31	8.1167	8.33
Jan. 7-12	7.9395	Jan. 7	7.9390	8.02
14-19	7.8908	14	7.9063	8.00
21-26	7.8610	21	7.8917	7.96
28-Feb. 2	7.1709	28	7.7847	7.75
Feb. 4-9	6.9709	Feb. 4	6.9942	7.02
11-16	6.9862	11	7.0000	7.09
18-23	6.8924	18	6.9858	7.07
25-Mar. 2	6.8558	25	6.7813	6.77
Average for period	7.7857		7.8767	7.9454

At Chicago, on the Chicago market, also called the Chicago re-sale market, NATIONAL PETROLEUM NEWS and *The Oilgram* were also low, the average of the *Chicago Journal of Commerce* U. S. Motor gasoline prices for the same three months' period being 7.6625 cents per gallon while the average for *The Oilgram* was 7.6224, or .0401 cent lower. The details of this comparison are given below:

Weekly Average Price Chicago Journal Commerce and Chicago Resale Market

Platt's Oilgram for December, January and February

Week Starting	Journal Commerce	Oilgram Chicago Resale Simple Average of daily prices F.O.B. Group 3
Dec. 1	8.7812	8.7521
10	8.4792	8.4500
17	8.3125	8.2775
24	8.3125	8.2188
Jan. 2	8.0125	7.8593
7	7.7781	7.7425
14	7.7500	7.7375
21	7.6771	7.6625
28	7.1146	7.0938
Feb. 4	6.8750	6.8625
11	6.8437	6.8125
18	6.8125	6.8125
25	6.8645	6.8375
Average for period	7.6625	7.6224

The Chicago Market

This Chicago market is not as well understood by the trade as it should be and it is growing in importance because of the development of refineries in the north, which sell some of their output to the jobber on the tank car market.

The Chicago market has been largely made by sales of brokers in the past, but in the future this will probably change to sales by refineries in that district. When quite a portion of the output of Oklahoma refiners was sold through brokers some years ago, the Chicago market and the Group 3 or Oklahoma market were generally right together in price, except that on a falling market the Chicago price would change a bit ahead of the Oklahoma price, whereas on a rising market the Chicago price would generally stay behind the Oklahoma price due to brokers having bought for over the month or for over 90 days, and making sure of selling out their commitments by keeping under the refiners' price.

As Oklahoma refiners put their own sales offices in Chicago and other northern points the volume of gasoline from Oklahoma refiners sold through brokers dwindled until for the past year or so it has been little or nothing. This took the Oklahoma refiners' prices out of the Chicago market, because their sales were all made as of the home office in Oklahoma and were reported by those home offices.

In place of Oklahoma gasoline last year more and more Chicago brokers sold gasoline from Louisiana and Arkansas and from Texas, particularly West Texas. All this gasoline the past year has been lower priced stuff than that sold by Oklahoma refiners and the result was that the Chicago market registered a lower level than the Oklahoma market, because the Chicago market had little if any Oklahoma material in it.

In addition to these brokers' sales of gasoline from various parts of the country, the Chicago price for some time now has also taken into consideration the prices of the Shell Petroleum Corp., from its refineries at East St. Louis (Wood River) and East Chicago and such sales of Sinclair as have been shipped from East Chicago. When the Cities Service Co. get their refinery near Chicago completed, and it will be started soon and some other new refineries are built there, the Chicago price will probably be dominated by these northern refineries, rather than by Louisiana and Arkansas and Texas as at present.

Because these Chicago prices have been based on Group 3, they have confused the industry considerably. Many people have thought the goods came out of Oklahoma but in the vast majority of cases they did not. As the Chicago refinery district grows in importance it is quite probable it will be a basing point, instead of Group 3, Oklahoma. Already the Shell Corp. is doing some of its billing on the Chicago basis, which will educate the trade to the freight rates from that point.

Great changes are taking place in the oil industry at the present time. What was true in the past may not be true in the future. It is a time when the oil man who would insure his own success will study all the factors in the industry, will study not only marketing but producing and refining —the whole industry. For tomorrow things may be still different.

H. H. Cross Co. Organizes Western Subsidiary

CHICAGO, April 25.—The Henry H. Cross Co. of California, has been organized with headquarters at Los Angeles in the Subway Terminal Bldg. It will do business in California and adjacent states. Officers of the Henry H. Cross Co. of Illinois, with headquarters in Chicago, have part interest in the California company, according to Mr. Cross.

Officers are: George F. Fox, president; Davis Peters, vice president; and Herbert A. Meek, secretary and assistant treasurer. Mr. Fox is vice president of the Henry H. Cross Co. of Illinois. Mr. Meek was formerly with the Indian Refining Co., Lawrenceville, Ill.

The Henry H. Cross Co. of Illinois owns and operates two refineries, one at Joliet, Ill. and one at Smackover, Ark., and markets all petroleum products.

Continental Can Co., Inc., 100 East 42nd St., New York, has acquired the McDonald Machine Co., Chicago, manufacturer of can making machinery. The latter company was established in 1903, and sells to both domestic and foreign buyers.

Battenfeld Celebrates 10th Company Anniversary

Staff Special
KANSAS CITY

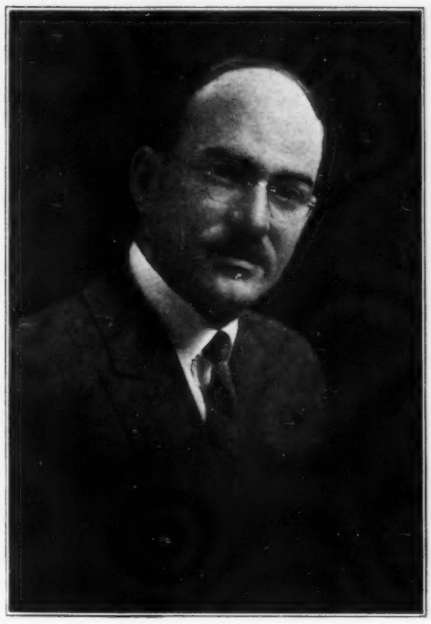
Last month the Battenfeld Grease & Oil Co. of Kansas City celebrated its tenth birthday in the business of manufacturing and selling solid and semi-solid lubricants for wheels that spin in the interest of business or pleasure, and bearings that carry the load.

J. R. Battenfeld recalled recently some of the high spots in the company's progress. He started on March 15, 1919, in a one and a half story building 60 by 100 feet. The company's output in that year was 2,358,000 pounds of lubricants. This was chiefly cup grease, gear compound and axle grease.

In the following year he added a two-story structure 50 by 100 feet to the plant and increased the output of products to 3,674,000 pounds. In 1921 Battenfeld took over the Thomason Petroleum Co. which occupied an adjoining building. This gave added space 50 by 100 feet, two stories high. The output of grease that year was 4,000,000 pounds.

In 1927 another 20,000 square feet of floor space was built onto the plant. The 1928 output of grease exceeded 20,000,000 pounds, more than 10 times the volume produced the first year. The plant's capacity is now in excess of four cars of grease a day.

While the Battenfeld Co. was growing, the automobile industry was growing too, and developing new lubrication needs. Ideas of automotive engineers as to the proper



J. R. Battenfeld

greases for their cars changed. To keep pace with these changing requirements, Mr. Battenfeld, about four years ago, employed a chemist. Now the company keeps three chemists busy.

When Mr. Battenfeld started in business, only a few kinds of oils were needed for grease making. Today 14 grades of oil are kept in stock and used constantly. These range all the way from very light neutrals to bright stock.

Pressure gun lubricating systems on automobiles began to gain rapid headway beginning about 1924. They required a somewhat different type of lubricant than the cup grease previously used.

Battenfeld was one of the first to make the new pressure gun grease. His sales of this in 1924 were 282,000 pounds. In 1925 pressure gun grease sales grew to 645,000 pounds; in 1926 to 1,412,000 pounds; in 1927 to 3,000,000 pounds and last year to 4,000,000 pounds.

Mr. Battenfeld says it is surprising to find that, despite the great growth of sales of automobile and other special greases for modern equipment, sales of the old fashioned cold set axle grease for lubrication of farm wagons and other rough uses has increased just about as much proportionately.

The present officers of the organization are:

J. R. Battenfeld—President and Treasurer.

A. J. Daniel—Vice-President and Secretary.

Ralph R. Matthews—Vice-President in Charge of Sales.

B. B. Boulware—Office Manager.

E. T. Gordon and J. H. Keith are salesmen visiting jobbers.

The two Battenfeld subsidiaries formed last year are the Battenfeld Grease & Oil Co. of Minnesota with plant and warehouse in Minneapolis in charge of L. A. Potter; and the Battenfeld Grease & Oil Co. of Louisiana with a warehouse in New Orleans, W. H. Saunders is the manager of the New Orleans branch.

ON THE LAZY BENCH

Dear Ed:

How extremely kind of you to send me that case of whisky for Christmas. I have never tasted such marvellous whisky in my life. I have never tasted such marvellous whisky and I keep tasting it. The whishy wesky you have send for me Christmas ism marvelous. I keep tashing it and how kind of you to send me thish wonderlous whihshy for Xmush, which I keep tashing. Its realy really its moshkind of you to to keep sending me this wis wiksy incases which I keep tashing for Xmush and tashing his hick tock dickery dock. What kind whishhy ole man how estrash ex stremely marveolous to tash on Xmas you great friend that thank you ole for ext extrextra extrem whwhsishy inainainainaina casg case 6¼o you xxxxx kisemus & XMu()L¼.

Y¼½/L ole OPA////
CheerioOOL¼6g."
3F¼6G—()..Y¼oxUL 6nxxxxXgL-
6½aaas—X&&&&

* * *

A colored woman presented herself at a registration booth with the intention of enrolling and casting her first vote in the ensuing election. She gave her name, her address and her age; and then the clerk of registration asked this question:

"What party do you affiliate with?"

The woman's eyes fairly popped out of her head. "Does I have to answer dat question?" she demanded.

"That is the law," he told her.

"Den you just scratch my name affen de books," she said. "Ef I got to tell his name I don't want to vote. Why, he ain't got his divorce yit."

—Pure Oil News

* * *

An old southern planter was discussing the hereafter with one of the colored servants. "Sam," he said, "if you die first I want you to come back and tell me what it's like over there. If I die first I'll come back and tell you what it's like."

"Dat suits me, Massa," replied the old negro, "but if you dies first Ah

Down Through The Valley of Stations

Wizard Oil Units fit in with the modern idea of architectural station beauty. No bunglesome, top heavy, blacksmithy appearance in the Wizard. They are designed for utmost practicability plus a definite factor of beauty. They blend into surroundings. They become a fixed part of any setting yet stand out because of their individual design.

Put a Wizard to work in your station and check up on the all around satisfactoriness they return in your oil dispensing department. Just note the improved cleanliness of your station by concentrating oils and greases in Wizard Controls. Keep a tab on gallonage and watch the rising sales curve. Note the extra two or three minutes quicker service to each customer. Tell us the size of your station and the average number of cars you serve each day and we will submit a Wizard recommendation together with price.

THE
NATIONAL STEEL BARREL CO.
3860 East 91st St. Cleveland Ohio
FACTORIES
Cleveland New Orleans

Export Department
R. Meyer, 487 Broadway
New York, U. S. A.

Cables - Rymer - New York
Codes ~ A-B-C-5th Ed. Bentley's

WIZARD
FOR PROFIT
OIL - GREASE - KEROSENE - ALCOHOL - EQUIPMENT AND STEEL BARRELS

wants you to promise me dat you'll come back in de daytime."

—The Oil Can

* * *

"What is usually done with the holes of doughnuts?"

"They're used to stuff macaroni."

—Magnolia Oil News

* * *

Traffic Cop: Say, lady, do you know how to drive a car?

Fair Motorist: Oh, yes. What is it you wish to know?

—The Loreco Diamond

* * *

"You have three pairs of glasses, professor."

"Yes, I use one for reading, one to see at a distance, and the third to find the other two."

—Our Sun

* * *

He: "Where is my fraternity pin?"

"I have it on my chiffonier."

He: "Your chif—well, don't forget to take it off before you send it to the laundry."

—The Loreco Diamond

* * *

The telephone girl was on her vacation. One day when she was out fishing someone in another boat called. "Hello!"

Just then a bob of the cork told her she had a bite.

"Line's busy," she answered, and pulled in her fish.

—Independent Topics

* * *

"Where are you going, my pretty maid?"

"I'm going to sneeze, kind sir," she said.

"At who? At who? At who?" said he.

"At-choo! At-choo! At-choo!" said she.

—Pure Oil News

* * *

It had always been Sam's ambition to own a fur coat, and after years of skimping he had achieved it. On the first day of its possession, as he was strutting down the street, a friend approached him.

"Mo'nin' Sam," the friend remarked, his teeth chattering from the wintry blast. "Pretty col' day, ain't she?"

Sam lifted his chin haughtily from the depths of his huge fur collar.

"Ah really kain't tell 'bout the weather," he replied carelessly. "Ah, ain't looked at de paper today."

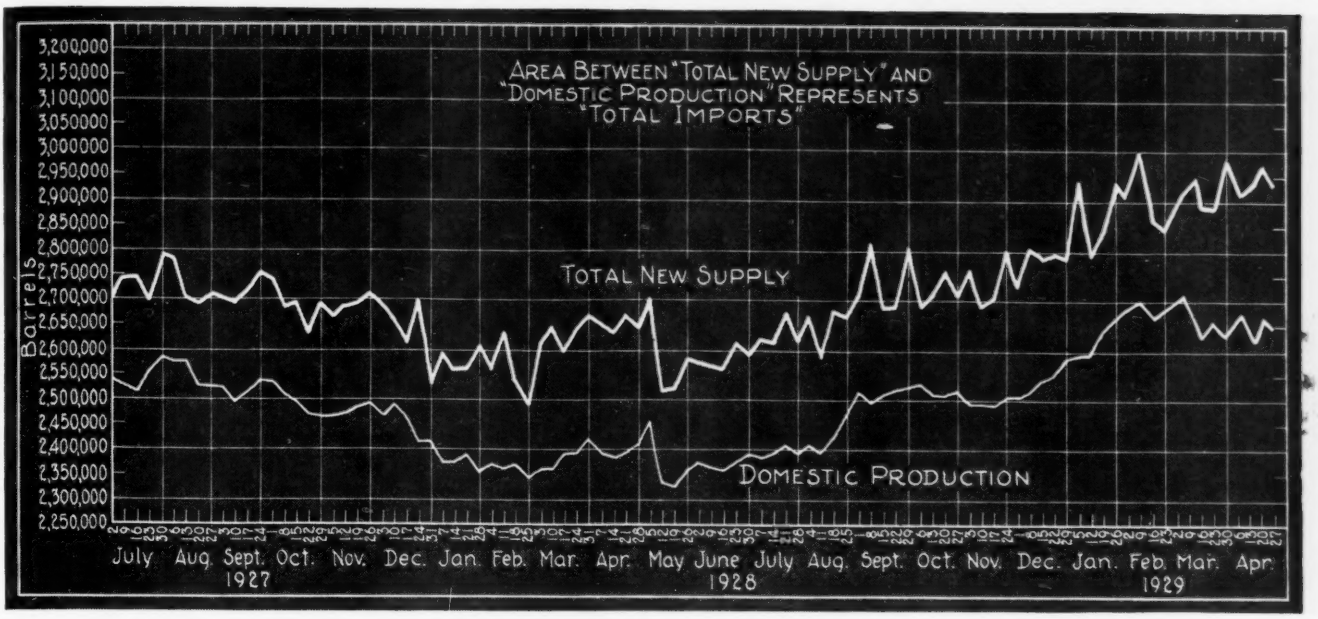
—Field Flashes

* * *

The old lady smiled and put her hand on his arm. "Officer," she said in a soft voice, "I just wanted to tell you that your number is the number of my favorite hymn."

—The Oil Can

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	April 27	April 20
Production east of Rockies	1,862,950	1,875,250
Decrease		12,300
Total production in U. S.	2,650,650	2,671,850
Decrease		21,200
Crude oil imports	287,428	304,000
Decrease		16,572
Total crude supply	2,938,078	2,975,850
Decrease		37,772

OKLAHOMA

	Apr. 27	Apr. 20
Allen Dome	25,750	26,300
Blackwell	3,950	3,950
Bowlegs	32,950	34,950
Braman	3,400	3,400
Bristow-Slick	19,650	19,650
Burbank	20,950	21,200
Cromwell	7,900	7,900
Cushing	20,600	20,650
Davenport	1,500	1,500
Duncan District	6,450	6,450
Earlsboro	60,200	60,900
Fox	1,450	1,450
Garber	5,550	5,850
Braham	4,250	4,300
Healdton	13,050	13,100
Hewitt	8,100	8,150
Hubbard	2,000	2,000
Little River	72,350	73,800
Logan County	10,900	11,000
Maud	28,900	28,650
Mission	30,300	29,450
North Okmulgee	13,700	13,750
Oklahoma City	3,250	3,350
Osage (outside Burbank)	24,850	25,050
Papoose	3,350	3,350
Pearson	2,200	2,450
St. Louis	99,750	107,300
Scholem-Alechem	12,950	13,000
Searight	11,550	9,500
Seminole	32,350	34,100
South Okmulgee	7,900	8,000
Thomas	800	850
Tonkawa	10,400	10,350
Wewoka	4,900	4,850
Yale-Jennings	7,100	7,150
Others	48,100	45,950
Total, Oklahoma	663,300	673,600
Decrease		10,300

KANSAS

Augusta-Fox Bush	2,950	2,950
Churchill	6,900	7,200
Eldorado-Towanda	12,750	12,800
Florence-Covert	1,000	1,000
Greenwood County	20,100	20,300
Oxford	5,050	5,250
Peabody-Elbing	2,750	2,750
Rainbow Bend	1,000	1,000
Russell	3,300	3,250
Sedgwick County	26,250	24,600
Others	27,800	28,000
Total, Kansas	109,850	109,100
Increase		750

NORTH LOUISIANA

Bellevue	700	700
Caddo, light	8,200	8,100
Caddo, heavy	3,250	3,150
Cotton Valley	3,000	3,050
De Soto and Red River	3,900	3,950
Elm Grove	550	600
Haynesville	5,350	5,350
Homer	4,050	4,050
Pleasant Hill	500	500
Urania	5,900	5,900
Others	250	250
Total, North Louisiana	35,650	35,600
Increase		50

ARKANSAS

Champagnolle	8,650	10,400
El Dorado	4,700	4,800
Lisbon	1,350	1,350
Nevada	1,200	1,200
Smackover, light	6,200	6,200
Smackover, heavy	49,100	48,450
Stephens	1,000	1,000
Others	100	100
Total, Arkansas	72,300	73,500
Decrease		1,200

TEXAS (Outside Gulf Coast)

Panhandle District

Carson County	6,550	6,500
Gray County	25,800	28,700
Hutchinson County	25,150	26,300
Wheeler County	650	650
Others	1,850	1,900
Total, Panhandle Texas	60,000	64,050
Decrease		4,050

North Texas

Archer County	16,700	15,650
Burkburnett	8,950	9,050
Electra	12,700	12,800
Iowa Park and K. M. A.	5,300	5,150
Montague-Cooke	13,000	12,550
Wilbarger	27,250	26,650
Others	500	500
Total, North Texas	84,400	83,350
Increase		1,050

West Central Texas

Brown County	8,400	8,550
Callahan County	4,000	3,900
Coleman County	3,600	3,600
Eastland-Desdemona	6,500	6,800
Jack County	1,950	1,600
Palo Pinto County	400	400
Shackelford County	13,200	*13,300
Stephens County	6,300	6,300
Throckmorton County	700	*650
Young County	6,750	6,700
Others	700	700
Total, West Central Texas	52,500	52,500

West Texas

	Apr. 27	Apr. 20
Crane and Upton Counties	47,600	48,850
Crockett County	2,200	2,150
Howard County	46,350	45,650
Jones County	5,650	5,850
Mitchell and Scurry Counties	2,750	2,600
Pecos County	88,500	92,200
Reagan County	18,800	19,150
Winkler County	144,150	139,000
Others	2,200	2,050
Total, West Texas	358,200	357,500
Increase		700

East Central Texas

Boggy Creek	2,800	2,900
Corsicana-Powell	8,000	8,100
Currie	500	500
Mexia	5,300	5,400
Nigger Creek	600	600
Richland	400	400
Wortham	1,100	1,150
Total, East Central Texas	18,700	19,500
Decrease		800

Southwest Texas

Dale	500	550
Laredo District	11,950	11,550
Luling	12,000	12,300
Lytton Springs	1,000	1,000
Salt Flat	40,450	41,400
Somerset	1,300	1,100
Others	4,450	4,950
Total, Southwest Texas	71,750	72,850
Decrease		1,100
Total, Texas (Outside Gulf Coast)	645,550	649,300
Decrease		3,750

GULF COAST

Coastal Texas

Barbers Hill	9,450	10,150
Batson	1,500	1,500
Big Creek	2,900	2,950
Blue Ridge	4,000	3,300
Boling	2,000	2,000
Damon Mound	700	700
Goose Creek	6,100	6,200
Hull	9,100	9,300
Humble	7,400	7,000
Orange County	2,950	2,800
Pierce Junction	21,100	15,850
Raccoon Bend	3,650	2,550
Saratoga	1,000	1,000
Somerville	2,900	3,250
Sour Lake	2,700	2,700
South Liberty	5,400	5,550
Spindletop	32,600	31,650
Sugarland	11,000	11,600
West Columbia	6,500	6,000
Others	4,650	5,100
Total, Coastal Texas	137,600	131,150
Increase		6,450

Coastal Louisiana

East Hackberry	2,650	3,800
Edgerly	800	800
Evangeline	800	800
Lockport	4,200	3,400
Old Hackberry	4,300	3,600
Sorrento Dome	350	350
Sulfur Dome	3,300	2,400
Sweet Lake	400	400
Vinton	4,100	4,000
Others	750	750
Total, Coastal Louisiana	21,650	19,300
Increase		2,350
Total Gulf Coast	159,250	150,450
Increase		8,800

ROCK MOUNTAIN

Wyoming

Big Muddy	2,400	2,300
Elk Basin	800	850
Grass Creek	2,250	2,300
Labarge	1,800	1,750
Lance Creek	250	250
Lost Soldier	3,300	3,300
Oregon Basin	2,350	2,350
Rock Creek	2,500	550
Salt Creek	27,150	35,350
Others	3,350	2,650
Total, Wyoming	46,150	53,650
Decrease		7,500

Montana

Cat Creek	1,400	1,400
Pondera	3,000	2,750
Sunburst	6,500	5,300
Others	100	100
Total, Montana	11,000	9,550
Increase		1,450

Colorado

Florence	1,050	1,050
Fort Collins	2,450	3,550
Moffat (Craig)	950	1,000
Others	1,800	1,800
Total, Colorado	6,250	6,400
Decrease		150

New Mexico

Artesia	900	900
Hogback	250	250
Rattlesnake	850	1,350
Table Mesa	.....	450
Others	400	400
Total, New Mexico	2,400	3,350
Decrease		950
Total, Rocky Mountain	65,800	72,950
Decrease		7,150

CALIFORNIA

Dominguez	10,500	10,500
Elwood-Goleta	35,000	31,500
Huntington Beach	44,000	46,500
Inglewood	23,500	25,500
Kettleman Hills	3,500	3,500
Long Beach	180,000	189,500
Midway-Sunset	72,500	72,500
Rosecrans	6,700	7,000
Santa Fé Springs	170,000	160,000
Seal Beach	41,000	48,500
Torrance	14,000	14,500
Ventura Avenue	56,500	56,500
Others	130,500	130,600
Total, California	787,700	796,600
Decrease		8,900

EASTERN

(Including Ill., Ind., Ky., O., W. Va., Pa., and N. Y.)	111,250	110,750
Increase		500

*Revised.

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to The National Petroleum Publishing Co.

National Petroleum News

Mid-Continent Refinery Operations Week Ended April 26 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended April 26
Plants Reporting	12	29	25	14	12	92
Da. Av. Cap. (Bbls.)	92,000	160,200	86,600	79,000	54,900	472,700
Da. Cracking Capacity	30,700	52,600	17,200	.....	22,700	123,200
Da. Av. Crude Runs	63,562 — 7.9	111,706 + 3.3	58,524 — 6.5	53,749 — 2.9	62,837 — 1.3	350,378 — 2.3
Da. Av. Other Oils	6,958 + 1.1	3,208 — 26.8	988 — 59.0	22 — 26.7	2,676 — 24.0	13,852 — 19.6
GASOLINE—Gallons						
Stocks, April 19	31,370,000	73,865,000	21,688,000	7,553,000	8,328,000	142,804,000
Prod. 4-19 to 4-26	9,133,000 — 4.8	18,800,000 + 5.3	7,038,000 — 7.8	3,993,000 — 4.2	5,918,000 + 2.5	44,882,000 — 0.3
Ship. 4-19 to 4-26	9,214,000 + 0.3	17,245,000 + 1.0	7,866,000 + 0.8	4,119,000 — 2.0	6,210,000 + 25.1	44,654,000 + 3.3
Stocks, April 26	31,289,000 — 0.3	75,420,000 + 2.1	20,860,000 — 3.8	7,427,000 — 1.7	8,036,000 — 3.5	143,032,000 + 0.2
Ratio Sales to Prod.	100.9%	91.7%	111.8%	103.2%	104.9%	99.5%
KEROSENE—Gallons						
Stocks, April 19	5,954,000	7,216,000	2,558,000	83,000	517,000	16,328,000
Prod. 4-19 to 4-26	2,299,000 — 8.4	2,165,000 + 4.1	1,498,000 — 2.5	3,000 — 91.4	253,000 + 16.5	6,218,000 — 2.5
Ship. 4-19 to 4-26	1,618,000 — 5.2	2,150,000 + 31.7	1,655,000 + 48.4	21,000 — 19.2	116,000 — 64.3	5,560,000 + 15.7
Stocks, April 26	6,635,000 + 11.4	7,231,000 + 0.2	2,401,000 — 6.1	65,000 — 21.7	654,000 + 26.5	16,986,000 + 4.0
Ratio Sales to Prod.	70.4%	99.3%	110.5%	700.0%	45.8%	89.4%
STOVE DISTILLATE—Gallons						
Stocks, April 19	1,069,000	3,070,000	637,000	311,000	70,000	5,157,000
Prod. 4-19 to 4-26	263,000 + 40.6	449,000 + 51.7	169,000 — 6.6	31,000 — 76.5	76,000 — 35.6	988,000 + 8.1
Ship. 4-19 to 4-26	144,000 + 71.4	341,000 + 64.7	133,000 + 68.4	87,000 + 3.6	100,000 — 15.3	805,000 + 40.7
Stocks, April 26	1,188,000 + 11.1	3,178,000 + 3.5	673,000 + 5.7	255,000 — 18.0	46,000 — 34.3	5,340,000 + 3.5
Ratio Sales to Prod.	54.8%	75.9%	78.7%	280.6%	131.6%	81.5%
GAS OIL—Gallons						
Stocks, April 19	7,360,000	15,799,000	6,463,000	16,106,000	6,488,000	52,216,000
Prod. 4-19 to 4-26	2,263,000 + 4.7	2,976,000 + 45.9	1,138,000 + 26.4	1,974,000 — 17.3	2,099,000 — 13.7	10,450,000 + 5.3
Ship. 4-19 to 4-26	1,735,000 — 15.5	1,304,000 — 20.0	854,000 + 14.2	1,158,000 — 34.9	2,331,000 + 38.3	7,382,000 — 6.5
Stocks, April 26	7,888,000 + 7.2	17,471,000 + 10.6	6,747,000 + 4.4	16,922,000 + 5.1	6,256,000 — 3.6	55,284,000 + 5.9
Ratio Sales to Prod.	76.7%	43.8%	75.0%	58.7%	111.1%	70.6%
FUEL OIL—Gallons						
Stocks, April 19	12,208,000	49,622,000	40,988,000	33,628,000	25,061,000	161,507,000
Prod. 4-19 to 4-26	5,283,000 — 9.3	7,372,000 + 2.3	7,016,000 — 6.6	8,362,000 + 4.7	8,905,000 — 4.0	36,938,000 — 2.3
Ship. 4-19 to 4-26	5,786,000 + 10.6	6,935,000 +257.1	7,299,000 + 24.0	9,450,000 + 11.7	9,162,000 +12.8	38,632,000 +30.3
Stocks, April 26	11,705,000 — 4.1	50,059,000 + 0.9	40,705,000 — 0.7	32,540,000 — 3.2	24,804,000 — 1.0	159,813,000 — 1.0
Ratio Sales to Prod.	109.5%	94.1%	104.0%	113.0%	102.9%	104.7%

Gasoline Produced by Various Methods, Week Ended April 26

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,381,000	69.9	12,758,000	67.9	5,074,000	72.1	3,790,000	94.9	2,613,000	44.1	30,616,000	68.2
Cracked	2,512,000	27.5	5,098,000	27.1	1,512,000	21.5	.....	....	2,756,000	46.6	11,878,000	26.5
Natural	240,000	2.6	944,000	5.0	452,000	6.4	203,000	5.1	549,000	9.3	2,388,000	5.3
Total	9,133,000		18,800,000		7,038,000		3,993,000		5,918,000		44,882,000	

+ or — columns are % change over previous week.

Mid-Continent Refiners Reduce Crude Runs

Staff Special—By Telegraph
TULSA, April 29

CRUDE runs in each district of the Mid-Continent were reduced during the week ended April 26 with the exception of Oklahoma a compilation of weekly operations reports to this publication from 92 refineries shows. Kansas refiners reduced runs 5,400 barrels daily average, North Texas refiners cut runs 4,100 barrels, West Texas refiners had a reduction of 1,500 barrels and Louisiana-Arkansas refiners reduced runs 800 barrels daily average. Oklahoma refiners increased runs 3,700 barrels daily average.

The reduction for the field totaled 8,300 barrels daily average the total daily average for the week being 350,378 barrels. Charges of other oils were reduced 3,400 barrels daily average.

Gasoline production for the field

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended April 26. Change in stocks figured from March 29.

	Gallons
GASOLINE	
Production	179,521,000
Shipments	176,868,000
Net change in stocks	+2,653,000
Ratio sales to production	98.5%
KEROSENE	
Production	25,598,000
Shipments	22,098,000
Net change in stocks	+3,500,000
Ratio sales to production	86.3%
STOVE DISTILLATE	
Production	4,422,000
Shipments	3,148,000
Net change in stocks	+1,274,000
Ratio sales to production	71.2%
GAS OIL	
Production	38,444,000
Shipments	27,894,000
Net change in stocks	+10,550,000
Ratio sales to production	72.6%
FUEL OIL	
Production	147,208,000
Shipments	138,607,000
Net change in stocks	+8,601,000
Ratio sales to production	94.2%

was reduced 132,000 gallons. Lower gasoline production was registered in each district except Oklahoma where the increase was a million gallons and in Louisiana-Arkansas where the increase was 153,000 gallons.

Shipments increased in each district except West Texas where they were virtually steady. Kansas refiners drew slightly on stocks but Oklahoma refiners increased stocks 1,500,000 gallons. North Texas refiners reduced stocks 800,000 gallons and West Texas refiners reduced storage 140,000 gallons. Arkansas-Louisiana refiners reduced stocks 290,000 gallons. Stocks were increased for the field 200,000 gallons. Shipments were at 44,654,000 gallons, an increase over the previous week of 1,400,000 gallons.

Kerosene production was comparatively steady for the week at 6,218,000 gallons while shipments increased 700,000 gallons. Stocks increased approximately 660,000 gallons. Kansas refiners added 600,000 gallons to storage but Oklahoma refiners had production and shipments almost in balance. North Texas refiners reduced stocks 150,000 gallons and Arkansas-Louisiana refiners increased stocks 150,000 gallons.

Kerosene stocks at the present time are 2,800,000 gallons higher in Kansas than they were the same time a year ago and 3,200,000 gallons higher in Oklahoma. In Arkansas-Louisiana they are 65,000 gallons lower which may account in part for the fact that the refiners in that district now have the best kerosene market in the Mid-Continent.

Stove distillates production increased 8.1 per cent while shipments jumped 40.7 per cent or 230,000 gallons. The increase in shipments failed to offset production except in West Texas and Louisiana-Arkansas and stocks were increased for the field as a whole. Stocks are slightly lower in Kansas than for this time a year ago but are a million gallons higher in Oklahoma.

Gas oil production increased 5.3 per cent while shipments dropped 6.5 per cent. Stocks were increased 5.9 per cent.

Fuel oil shipments jumped up almost 10,000,000 gallons for the field. Each district showed an increase with Oklahoma leading with a percentage of 257.1. Shipments totaled 38,632,000 gallons. Production was reduced 800,000 gallons. Each district drew on stocks except Oklahoma this being in the face of the large increase in shipments from that district.

The Griscom-Russell Co., 285 Madison Ave., New York City, has off the press a leaflet describing the Bundy Oil separator for use in oil refineries in removing oil from exhaust steam, gasoline from compressed natural gas, etc.

L. A. Snyder

L. A. Snyder to Manage Rock Island Sales

TULSA, April 27.—L. A. Snyder, sales manager for Champlin Refining Co., Enid, has resigned effective May 1, and will become sales manager for Rock Island Refining Co., Duncan, Okla., according to an announcement today. Charles Pepin will become acting sales manager for Champlin.

Several improvements including a pipe still have been completed recently at the Rock Island plant. L. B. Simmons, president, has been in general charge of sales and refinery operations, and a portion of the plant's output has been sold through the Calvert Oil Co. of Tulsa.

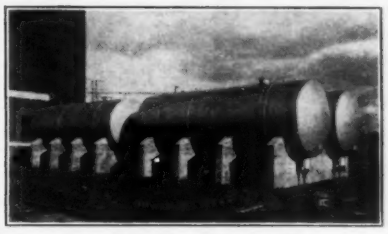
Service Station Men Hold Meeting

CLEVELAND, April 30.—An initial organization meeting of the American Association of Service Stations was held at the Hollenden hotel here April 29. About 30 station operators were present.

W. E. MacEwen, managing director, addressed the station men on the need of a national organization, saying that every other branch of our industry is thoroughly organized so that its interests may be protected.

Fields of endeavor suggested for the organization included cooperative buying to enable Independent station owners to compete with the chain stations, teaching better merchandising methods and legislative work.

-TANKS-



Public Service Production Co.
Roseland, N. J.

REDHEAD PDM tanks are designed and built to safely store inflammable liquids of any type. Highly combustible oils are confined with surety, as all seams are welded or riveted-and-welded, tested and guaranteed tight at a pressure of five pounds per square inch. They meet all the requirements of the Underwriters' Laboratories and can be furnished with Underwriters' Labels if desired.

REDHEAD PDM tanks, carried in stock and ready for immediate shipment, range from 75 to 26,000 gallons in capacity.

Pittsburgh-Des Moines Steel Company
55 Neville Island, Pittsburgh, Pa.

Guaranteed 100% PURE PENNSYLVANIA OIL

Finest Grades of
100% Pure Pennsylvania Products

GASOLINE
KEROSENE
FUEL OIL
NEUTRALS
BRIGHT STOCKS
MOTOR OILS

Our 30 years of experience is our guarantee to you of the finest and best products that can be produced.

Let us quote on your requirements.

Write—Wire—Phone

Superior Oil Works
Warren, Penna.

If you want more *pleasure* out of motoring put more care into selecting *gasoline* ....

IF you think of motoring as more than mere transportation—if, to you, it is the happiest of outdoor sports—then, by all means, stop and look into Sinclair "Three-Gas" Service!

Here you don't just "buy" a gas—you SELECT it—select it to fit your own car's needs—select it to put extra performance into your engine and extra fun into your motoring.

Do you want fast-starting, rocket-like getaway, lightning acceleration and brilliant all-round performance?—then have Sinclair Aircraft Gasoline—the *Ace* of high-test gasolines.

Or, do you want High-Compression performance, better low-gear performance, and a complete absence of knocking even on the hills?—then fill up with Sinclair H-C Gasoline. Or, if you prefer a price three cents less a gallon—ask for Sinclair Regular Gasoline—full of eager power—full, too, of mileage and economy.

They are *all*-gasoline—nothing added!

No longer do you have to buy the gasoline that's just right for somebody else's car—use the one *best* for yours! Drive in and *select* it, wherever you see the Sinclair Sign.

The ACE of High-Test Gasolines . . . for Speedy Take-off . . . Flashy Acceleration . . . Brilliant Performance. It meets the specifications of the Army, Navy, and Bureau of Mines for AVIATION GASOLINE —domestic grade

Gives Higher Compression . . . Stops Knocks . . . Better Low-Gear Performance

Economy and Mileage . . . Full of Eager Power

SINCLAIR "*Three Gas*" SERVICE

© 1929 S. R. C.

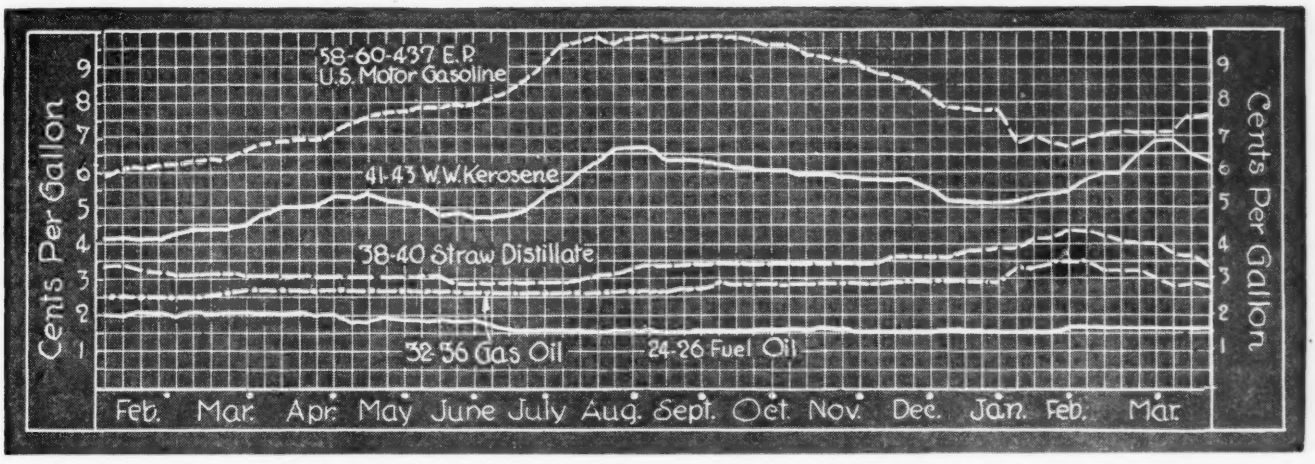
A gas for every motoring need—let us help you get SUPERIOR ENGINE PERFORMANCE

SINCLAIR REFINING COMPANY, INC., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

Refinery - Tank Wagon Markets

National Petroleum News

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Mid-Continent Gasoline Steady; Exporter Places Big Order

Staff Special
TULSA, April 27

THE Mid-Continent market generally was steady throughout the week of April 22 to 27, with the exception of kerosenes and gas oils. Gasoline demand was fair from the domestic trade and at least one export order for 2,000,000 gallons was placed.

Excessive rains hampered gasoline consumption in some districts of the Middle West. Business was fair in other districts and prices were unchanged in all areas.

Natural gasolines were more freely offered toward the close of the month, but some inquiries were made for goods for shipment over May.

Kerosenes slowed up in demand and buying was mostly on a hand to mouth basis. Gas oils were more freely offered. Distillates were in little demand. Neutral oils and cylinder stocks were more active, with price of bright stock advanced 1 cent a gallon.

Gasolines

An export purchase of 61-63, 390 e.p. gasoline was reported April 23. The amount was 2,000,000 gallons, half being bought for shipment in May and the remainder at a later date. A few inquiries for export gasoline were made but no other purchases were reported.

Domestic demand for gasolines was steady. Price of 58-60 U. S. Motor in Oklahoma remained at 7.50 cents a gallon, with only odd cars sold below this figure, while several sales were reported in the course of the week at slightly higher prices. Other grades of gasoline also were in fair demand.

West Texas refiners were in excellent shape as far as gasolines were concerned. Several of them had sizable contracts for this month which took virtually all their production.

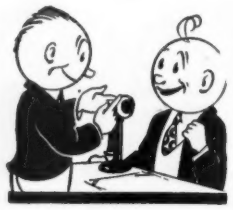
With the advent of warmer weather several West Texas refiners report they will attempt to market their gasoline more on anti-knock and distillation range basis than on gravity. The gasoline the majority of them produce has a gravity of 52 to 54, but since no gravity specification is required for U. S. Motor grade they will attempt only to meet the distillation requirements and attempt to get away from the custom of selling on gravity as much as possible.

Arkansas and Louisiana refiners reported a fair demand for their gasolines. Kansas refiners suffered somewhat from excessive rains within the state but reported business fair in other parts of the territory.

Natural Gasolines

An end-of-the-month slump in demand for natural gasolines developed during the week, after a small buying flurry April 23 and 24. The buying pushed grades A and AA up to 8 cents, but the purchases were not sufficient in volume to maintain that level more than 24 hours.

A few manufacturers who desired to clean up their production before the end of the month offered their surplus late in the week at prices slightly lower than had prevailed the first half. Large buyers who usually cover some of their contracted requirements in the open market had completed their purchases and had the goods moving to destination, and



[*What they say about the Por-Pail No. 4*]

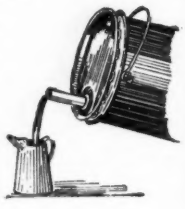
"The* POR-PAIL *makes a sales talk a man can understand"

—says the salesman

"There are technical reasons why my oil is better, but they don't get across to the man who doesn't know what I'm talking about. But when I tell him that my oil is *easier to sell* because it comes in the convenient and useful Por-Pail, I'm talking his language and he has to respond."

We can talk your language too when it comes to showing you the advantages of the Por-Pail.

Ask us.



Wilson & Bennett Mfg. Co.

6520 S. Menard Ave., Chicago

Box Type Cases

Attractive and serviceable cases of black cobra grain Keratol and lined with red velveteen. Comfortable handle. Plain bottles in separate compartments.

No. 260—Contains twelve 2-oz. long bottles and five ½-oz. tall grease jars..... **$3.20**

No. 261—Contains six 4-oz. bottles and five ½-oz. grease jars..... **$3.55**

No. 262—Contains seven 4-oz. bottles and five grease jars..... **$3.80**

No. 263—Contains nine 4-oz. bottles and four ½-oz. grease jars..... **$4.25**

10% discount for Cash

Other Styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware Kansas City, Mo.

switched their interest to inquiries for shipment over next month. Buying for May delivery was comparatively light.

Grades B, BB and C were not in as active demand as were grades A and AA, and prices were somewhat lower toward the end of the week.

Kerosenes

Domestic and export movement of kerosenes was slow. Arkansas and Louisiana refiners were the only ones in the Mid-Continent who did not lower prices during the week. They reported demand from the surrounding farm trade was good in proportion to the amount of stocks on hand. Indications April 27 were that one or two refiners in that district would announce slightly lower prices by May 1.

Kerosene prices in Oklahoma moved down with competition brisk from both North Texas and Kansas. The Texas refiners offered 41-43 w.w. grade at 6.25 cents, Group 3, before the end of the week. Kansas refiners were hampered by excessive rainfall which cut into the normal demand in that state and they sought to move some of their goods into other territories.

Most of the buying was strictly on a hand-to-mouth basis. Inquiries for deferred shipment were comparatively few. This was taken by a few sales managers as an indication farmers were about through with their spring plowing in most districts except the extreme northern states and jobbers were not willing to put kerosene into storage at present prices in anticipation of the demand around the summer harvest time.

Gas Oils and Distillates

West Texas refiners have become more active in the gas oil market with prices somewhat under those prevailing in Group 3. One West Texas refiner recently contracted to deliver 3000 cars or 250 cars a month over the next year to a Kansas City marketer. The oil is to be of 30-32 gravity and the price was reported to net the refiner around 1.81 cents a gallon f.o.b. his plant. The price was around 2.25 cents a gallon, Group 3.

Another West Texas refiner has contracted his gas oil output for six months at a flat price of 2 cents a gallon, f.o.b. his plant. Refiners in that district get about 25 per cent gas oil out of the crude. At a price of 2 cents a gallon the refiner is getting 84 cents a barrel for his gas oil. His gas oil, therefore, is paying him back approximately 21 cents on each barrel of crude he runs, and the crude costs him from 65 to 75 cents a barrel.

Gas oil made from sweet Mid-Continent crude brought slightly higher prices, although demand for all gas oils has been lighter. The major buying in Oklahoma and Kansas has been from refiners seeking cracking stock, and large industrial concerns.

Distillates were extremely slow with only a small amount of moving on contract.

Most of the distillate movement now is to extremely northern points where spring has not been far enough advanced to keep the coolness out of the mornings and evenings.

Fuel Oils

Oklahoma and Kansas fuel oils were comparatively steady in price and demand, with the exception of one or two grades. Lower gravity oils were in more demand as spring weather made their handling easier.

West Texas refiners apparently were pessimistic with regard to the fuel oil outlook for this summer. Two or three of them expressed the opinion that if they obtained an average around 20 to 30 cents a barrel over the summer they would be fortunate.

Neutrals and Cylinder Stocks

Several refiners said they were sold up on neutral oils while other reported being low on stocks at the present time. Sales were mostly at unchanged prices. Demand showed a slight increase.

Bright stock was active and prices generally were advanced 1 cent a gallon. A few quotations for 150-160 vis. 210 bright stock were made at 34 to 35 cents a gallon for deferred shipment.

Tidal Buys Refinery Site at Houston

TULSA, April 27.—The Tidal Refining Co. of Tulsa has purchased a 700 acre site on the Houston ship channel which will be used for a refinery and terminal purposes at a later date, according to an announcement here.

Present plans call for no additional work until sometime in 1930. A refinery with a capacity of 15,000 barrels daily eventually will be contracted, according to present plans. The Tidal Refining Co. is a subsidiary of the Tide Water Oil Co. of New York.

The cost of the proposed project when completed was estimated at $3,000,000.

CHICAGO, April 26.—On April 25, A. G. Talbot, Inc., Chicago, brought in a flowing oil well at Ashland county, Ohio, in the Berea sand. Through lack of storage facilities the well was not allowed to flow freely but was spouting upward 25 feet in the derrick. No gravity tests were taken but the oil was believed to be a Pennsylvania grade.

Chicago Resale Market

Buyers Seeking May Gasoline

Staff Special
CHICAGO, April 27

U. S. MOTOR gasoline was in good demand in the Chicago resale market during the week ended April 27, especially during the closing days, while kerosenes, distillates, gas and fuel oils were generally quiet.

Most of the local trade were taking considerable interest in U. S. Motor gasoline for May delivery, but the majority of refiners reported they were not quoting over this period. A number of sales, to jobbers, were reported at 7.75 cents for delivery over the first half of May and some were reported, for resale, at 7.50 to 7.625 cents for delivery over this period. A few sales to jobbers were reported at 7.875 and 8 cents over the entire month and at 7.625 and 7.75 cents for resale purposes.

The spot gasoline market continued to move forward. Sales of Oklahoma 58-60 U. S. Motor were reported at 7.375 to 7.50 cents early in the week, and although some goods moved at 7.375 cents during the closing days by far the bulk of sales were at 7.50 cents. In a few instances, mostly where the seller had to have instructions for goods in transit, sales as low as 7.25 cents were reported. On the other hand, one or two Oklahoma refiners moved U. S. Motor at 7.625 cents and several of them announced their intention to advance their prices to this figure on April 29.

U. S. Motor gasoline out of West Texas was also higher and by April 27 was practically on a par with Oklahoma goods. Sales were reported at 7.25 to 7.375 cents, Group 3 basis on April 22 and 23, while the 7.25 cent goods quickly disappeared. By April 27 only scattered cars were available at 7.375 cents Group 3 and the bulk of sales were at 7.50 cents.

The demand for higher gravity gasolines was only fair in most quarters, although prices were advanced by several sellers. The 60-62, 437 e. p. grade opened April 22 at 7.50 to 7.625 cents and moved mostly at 7.50 to 7.75 cents thereafter. Most sales of 60-62, 400 e. p. were at 7.75 to 7.875 cents after April 23 and at 7.625 to 7.75 cents previously. The 64-66, 375 e. p. moved mostly at 8 to 8.125 cents all week.

The demand for kerosene was very light in nearly all quarters this week and prices were off approximately 0.125 to 0.25 cent. Reports from over the territory indicated that many jobbers were using gasoline for their tractors instead of kerosene. In many places the former product was selling at so near the same price as kerosene as to make it more attractive.

On April 22 and 23 the bulk of sales of 41-43 w. w. kerosene still were at 6.50 cents. On April 25 the bulk of movement was at 6.25 to 6.50 cents and on April 27, sales were reported at 6.125 to 6.50 cents. However, on April 27 by far the majority of the trade were quoting either 6.25 or 6.375 cents.

Demand for distillates was very light the past week and prices continued to move downward. Nearly all sellers reduced their quotations 0.125 to 0.25 cent. The bulk of sales of 38-40 straw were at 3.75 to 3.875 cents April 22; 3.625 to 3.875 cents April 23; 3.625 to 3.75 cents April 24 and at 3.50 to 3.75 cents thereafter.

Gas oils were quiet and prices were off 0.125 cents in most quarters. One sale of 1,000,000 gallons of U. G. I. gas oil was reported closed at 2.25 cents. The goods were purchased by an industrial concern and it was thought would be shipped from West Texas.

The 32-36 ordinary dark gas oil moved most of the week at 2.50 to 2.625 cents after opening April 22 at 2.50 to 2.75 cents. Dark 32-36 gas oil with a zero cold test was reported sold at prices ranging from 2.50 to 3 cents, but bulk of sales throughout the week were at 2.75 to 2.875 cents. The 32-36 straw zero gas oil moved mostly at 2.875 to 3 cents.

The movement on fuel oils was slow this week and prices were reduced by most sellers. The 28-30 zero fuel opened April 22 at $1.00 to $1.05 and moved mostly at $0.95 to $1.05 thereafter. Ordinary 28-30 continued to move mostly at $0.90. The prevailing quotations on 24-26 fuel were unchanged at $0.65 to $0.675. Low sulfur 18-22 fuel oil sold mostly at $0.575 to $0.60 until April 24 and at $0.55 to $0.60 thereafter. Sales of 18-22 high sulfur were reported at $0.475, but the bulk of goods moved at $0.50 to $0.525.

One or two precipitation periods are likely next week in the Standard of Indiana territory. No extremes of temperature are likely, says the Chicago weather bureau.

Consider
These Tests

100% PURE PENNSYLVANIA PRODUCT
Gravity 27½
Flash 460
Viscosity @ 210 85/90
COLD TEST 0 to 5°
Color—Dark sharp stock or E.

Refiner will consider an exclusive territory contract for large marketer over a period of years based on crude.

We know of no duplicate for this oil in durability. Here you have the highest Flash for summer use, combined with an extremely low cold test for Winter, —a combination unobtainable in other oils. Trucks, Tractors and Busses need this oil.

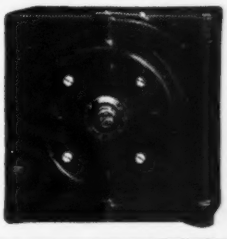
Box 319
Care National Petroleum News
1213 W. 3rd St.—Cleveland, Ohio

Another Filling Station Raided!

A SHORT "joy ride" from a nearby city—a quick attack upon your filling station, and the thieves return to their haunts well supplied with cash.

Only the best protection obtainable—the York Round Door Chest—is good enough to resist the stubborn attacks of these cracksmen.

Follow the lead of the largest chains of filling stations—install York Round Door Chests.



York Safes

YORK SAFE and LOCK COMPANY
YORK, PA.

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

Weighted Average Prices

OKLAHOMA (Weighted Average Prices)

	Prices April 29	Prices April 22	Prices April 15
58-60 U.S. Motor, 437 e.p.	7.5635	7.5125	7.4290
60-62 437 e.p. gasoline...	7.7857	7.7000	7.6364
60-62 400 e.p. gasoline...	8.1250	7.8750	7.8750
64-66 375 e.p. gasoline...	8.5000	8.5000	8.4167

All above weighted average prices are effective on Monday on the dates shown at the top of the columns.

The weighted averages shown above which in the case of motor are based on total of 71 cars indicate the Oklahoma gasoline market is steady at a 7.5 to 7.625 range. The total motor sales is comparatively good for a half business day which also would indicate a good demand for gasoline.

Only odd cars were reported moved at any time the past week at under 7.5 by the few non-reporting refiners and most of these sales did not go direct to jobbers.

KANSAS (Weighted Average Price)

	Prices April 29	Prices April 22	Prices April 15
58-60 U.S.Motor 437 e.p.	7.8800	7.7813	7.7500

Gasoline demand in Kansas was slowed up slightly due to rains but business was sufficient in volume to keep prices firm. Demand over the week end was reported good by most refiners.

(The Oklahoma weighted average prices above are made up from confidential daily reports on all gasoline spot market sales —for shipment in 10 days—from Oklahoma refineries representing 91.8 per cent of the state's refining capacity. The Kansas weighted average prices above are made up from confidential daily reports of all gasoline spot market sales from Kansas refineries representing 58 per cent of the state's operating capacity. The above prices do not include prices on sales for "over the month," for contracts, or to brokers on shipments to company owned stations. Records of the reporting refiners are checked periodically to verify the accuracy of their reports.—Editor)

OKLAHOMA	Prices April 29	Prices April 22	Prices April 15
48-50 450 e.p. naphtha...	7.125– 7.375	†7.00 – 7.25	†6.875– 7.125
50-52 450 e.p. naphtha...	7.125– 7.375	†7.00 – 7.25	†6.875– 7.125
56-58 450 e.p. gasoline...	7.25	7.125– 7.25	7.125– 7.25
58-60 450 e.p. gasoline...	7.25 – 7.375	7.25	7.125– 7.25
64-66 390 e.p. gasoline...	8.00 – 8.25	7.875– 8.00	7.875– 8.00
68-70 350-360 e.p. gasoline	8.625– 8.75	8.625– 8.75	8.50
PENNSYLVANIA			
52-54 Naphtha.....	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
54-56 Naphtha.....	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
58-60 U.S. Motor 437 e.p.	9.25 – 9.75	9.00 – 9.75	9.25 – 9.50
60-62 400-410 e.p. gasoline	9.50 –10.25	9.50 –10.25	9.50 –10.25
64-66 390 e.p. gasoline...	10.25 –11.00	10.25 –11.00	10.00 –10.50
68-70 Str-run gas 350-360 e.p.....	11.25 –12.00	11.25 –12.00	10.75 –11.50

‡Price of Saturday, March 30.

OHIO (Quotations of S. O. Ohio. 3c state tax to be added.)

U. S. Motor Gasoline

Cincinnati.....	10.75	10.75	10.25
Cleveland, Toledo, Lima.	10.75	10.75	‡10.25
Elsewhere in Ohio.....	11.25	11.25	10.50

‡Within switching area of refinery. On April 15, prices at Dayton and Columbus are included in "Elsewhere in Ohio".

"Shipping limits" are defined as areas where freight rates from company's shipping points, Cleveland, Toledo and Lima, are the same as to cities mentioned.

KANSAS (F. O. B. refinery Kansas destination)

	Prices April 29	Prices April 22	Prices April 15
60-62 437 e p. gasoline...	7.75 – 8.00	7.50 – 7.75	7.50 – 7.75
60-62 400 e.p. gasoline...	8.00 – 8.25	8.00 – 8.125	7.875– 8.125
64-66 375 e.p. gasoline...	8.50 – 8.625	8.50 – 8.625	8.50 – 8.625
NORTH TEXAS			
48-52 450 e.p. naphtha...	†7.00 – 7.125	†7.00	†7.00
56-58 450 e.p. gasoline...	7.125	7.00	.....
58-60 450 e.p. gasoline...	7.125	7.00	7.00
58-60 U.S. Motor 437 e.p.	7.375– 7.50	7.25 – 7.50	7.00 – 7.25
60-62 400 e.p. gasoline...	7.50 – 7.625	7.50	7.25 – 7.50
64-66 390 e.p. gasoline...	7.625– 7.75	7.625– 7.75	7.75
64-66 375 e.p. gasoline...	7.875	7.875	7.875– 8.00
68-70 350-360 e.p. gasoline	8.25 – 8.375	8.25 – 8.50	8.25 – 8.50

****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**

50-52 naphtha.....	7.00 – 7.25	6.75	6.75
56-58, 437 e.p. gasoline..	7.25 – 7.50	7.00	7.00
58-60, 437 e.p. gasoline...	7.25 – 7.50	7.25 – 7.375	7.125– 7.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor gasoline	7.875	7.75	7.75

ARKANSAS (Arkansas destination only)

58-60 450 e.p. gasoline...	7.50	7.50	7.50
58-60 U.S. Motor 437 e.p.	7.75 – 7.875	7.75	7.75
61-63 390 e.p. gasoline...	8.00 – 8.50	8.25	8.00 – 8.25

Comparative Prices of 58-60 U. S. Motor Gasoline, Group 3 and Point of Origin, to Jobbers Only, in Effect April 29

	Price F.O.B Group 3	Price F.O.B. Point of Origin	If for Particular Destination
Oklahoma	7.5635 (Wt. Avg.)	7.5635 (Wt. Avg.)	.....
Kansas	7.50-7.625	.....	S. O. Neb. & Ind. Territories, etc.
Kansas	.....	7.8800 (Wt. Avg.)	Kansas only.
North Texas	7.50	7.375-7.50	.....
West Texas	7.25-7.50	7.25-7.50	.....
Louisiana-Ark.	7.50	.....	Mich., Ohio & Indiana.
Louisiana-Ark.	.....	7.75	State or differential haul.
Indiana-Illinois....	7.50-7.625	.....*	S. O. Ind. territory except Detroit and vicinity. For Ohio on delivered basis only.

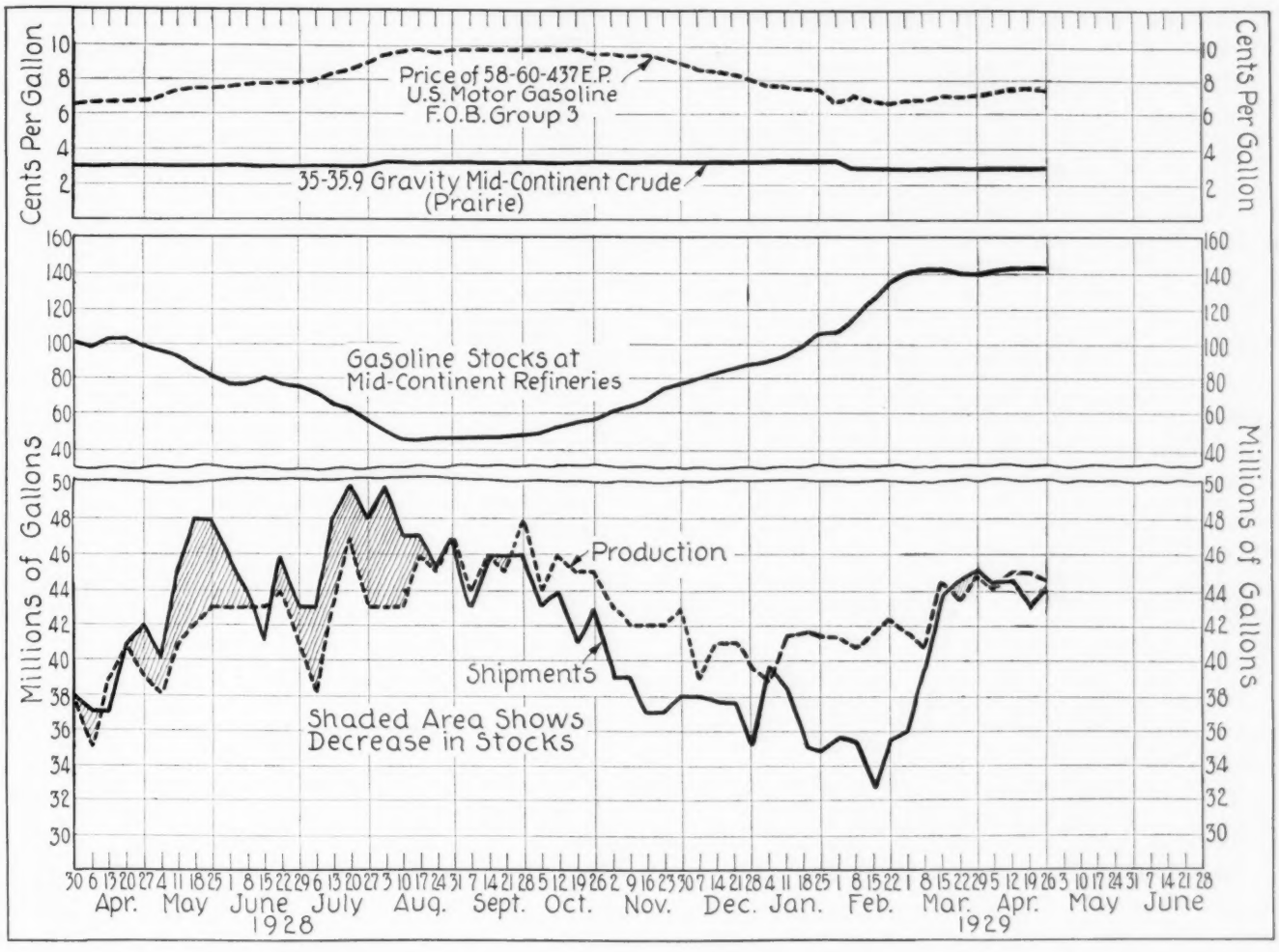
*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

(Continued on Page 114)

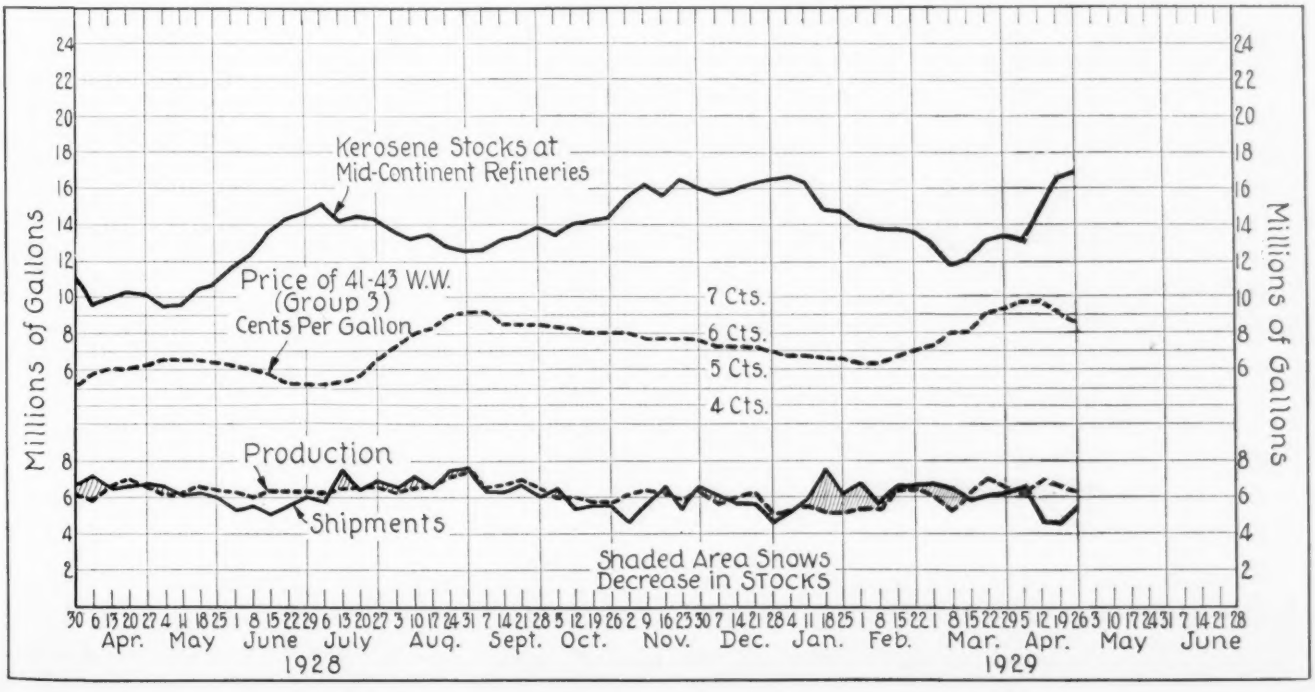
†Prices nominal ††Only one refiner quoting *Quotations only **Represents Both Sales and Quotations.

Barometer of Mid-Continent Refinery Market—Week Ending April 26

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 92 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 106



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

‡CALIFORNIA

	Prices April 29	Prices April 22	Prices April 15
54-58 U.S. Motor 437 e.p.	7.00 – 8.50	7.50 –10.50	7.50 – 9.50
58-61 375-400 e.p. gasoline	7.50 – 9.00	8.50 –11.50	8.50 –10.50
42-45 Eng. dis. 445-480 e.p.	8.00 – 9.00	8.00 – 9.00	7.50 – 8.50

‡3c tax to be added to California gasoline prices if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA

Grade AA, 80-87.9, 90% Recovery	7.75	7.875	8.00
Grade A, 72-79.9, 90% Recovery	7.75	7.875	8.00
Grade BB, 84-92, 85% Recovery	7.50	7.75	7.75
Grade B, 76-83.9, 85% Recovery	7.50	7.75	7.75
Grade C, 80-92, 78% Recovery	7.375	7.50	7.50

NORTH TEXAS (F. O. B. Breckenridge)

Grade AA, 80-87.9, 90% Recovery	7.75	8.00	8.00
Grade A, 72-79.9, 90% Recovery	7.75	8.00	8.00
Grade BB, 84-92, 85% Recovery	7.50	7.75	7.75
Grade B, 76-83.9, 85% Recovery	7.50	7.75	7.75
Grade C, 80-92, 78% Recovery	7.375	7.50	7.50

NORTH LOUISIANA (F. O. B. Monroe District)

Grade AA	†7.875	†8.125	†8.125
Grade BB	†7.625	†7.875	†7.875
Grade C	†7.50	†7.625	†7.625

CALIFORNIA

75-85, 375-390 e.p. blend	7.50 – 8.75	7.75 – 8.75	7.75 – 8.75

MOTOR FUEL BLENDS

OKLAHOMA

64-66 Blend 437 e.p.	7.50	††7.50	7.125– 7.25

BURNING OILS

PENNSYLVANIA

45 w.w. kerosene	7.375– 7.75	7.50 – 7.75	7.50 – 7.75
46 w.w. kerosene	7.75 – 8.125	7.75 – 8.00	7.75 – 8.00
47 w.w. kerosene	8.50 – 8.75	8.50 – 8.75	8.50 – 8.75
300 mineral seal	7.50 – 8.125	7.50 – 8.00	7.50 – 8.00

OKLAHOMA

	Prices April 29	Prices April 22	Prices April 15
41-43 w.w. kerosene	6.25 – 6.50	6.50	6.75
42-44 w.w. kerosene	6.75 – 7.00	6.75 – 7.00	7.00 – 7.25

KANSAS (F. O. B. refinery Kansas destination)

41-43 w.w. kerosene	6.75 – 6.875	6.75 – 6.875	6.875– 7.00
42-44 w.w. kerosene	7.125	7.125	7.125

NORTH TEXAS

40-42 w.w. kerosene	6.00	6.125	6.25
41-43 w.w. kerosene	6.00 – 6.125	6.125– 6.25	6.25 – 6.50

NORTH LOUISIANA (N. La., Ark and Miss. destination)

41-43 w w. kerosene	7.00 – 7.25	7.25	7.00 – 7.25
42-44 w.w. kerosene	7.00 – 7.25	7.25	7.25

ARKANSAS (Arkansas destination only)

42-44 kerosene	7.00	7.25	7.25

CALIFORNIA

38-40 w.w. kerosene	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

NEUTRAL OIL

PENNSYLVANIA

Vis.	(Viscosity at 70°F.)		
200 No. 3 Assoc. Filt.	29.50 –30.00	29.50 –30.00	29.50 –30.00
180 No. 3 Assoc. Filt.	26.00 –28.00	26.00 –28.00	25.00 –28.00
150 No. 3 Assoc. Filt.	22.00 –23.00	22.00 –23.00	21.50 –23.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 9.00	7.50 – 9.00	7.50 – 8.50

****OKLAHOMA**

Vis. Color	(Viscosity at 100°F.)		
100—No. 2	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
150—No. 3	7.50 – 8.50	7.50 – 8.50	7.50 – 8.50
150—No. 4	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
180—No. 3	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
180—No. 4	8.75 – 9.75	8.75 – 9.75	8.75 – 9.75
180—No. 5	8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
200—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 4	9.25 –10.00	9.25 –10.00	9.25 –10.00
200—No. 5	9.00 – 9.50	9.50	9.00 – 9.50
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
240—No. 4	12.00 –13.00	12.00 –13.00	12.00 –13.00
240—No. 5	11.00 –13.00	11.00 –13.00	11.00 –13.00
280—No. 3	14.00 –15.50	14.00 –15.50	14.00 –15.50
280—No. 4	13.00 –14.00	13.00 –14.00	13.00 –14.00
280—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
300—No. 5-6	15.00 –17.00	15.00 –17.00	15.00 –17.00

GULF COASTAL

Vis. Color	(Viscosity at 100°F., pour test 0)		
100—No. 2 Pale	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00
200—No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300—No. 3 Pale	10.00 –10.50	10.00 –10.50	10.00 –10.50
500—No. 3½ Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
750—No. 4 Pale	14.00 –14.50	14.00 –14.50	14.00 –14.50
200—No. 5½ Red Oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 5½ Red Oil	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
500—No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750—No. 6 Red Oil	12.00 –12.50	12.00 –12.50	12.00 –12.50

†Prices nominal ††Only one refiner quoting *Quotations only **Represents both sales and quotations ***Represents quotations and offers to buy

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

CALIFORNIA

Vis.	Color	Prices April 29	Prices April 22	Prices April 15
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. at 210°Brt. St.	34.00	33.50	33.50
150-160 Vis at 210° Brt. St.	32.00 –33.00	32.00	32.00
600 E. St. 140-150 Vis.-210°	18.00 –20.00	18.00 –19.00	18.00 –19.00
600 St. Ref. Olive Green	10.50 –12.00	11.00 –12.00	10.00 –12.00
600 St. Ref. Dark Green	10.00 –11.00	8.00 –10.00	8.00 –10.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	†33.00 –35.00	†32.00 –33.00	30.00
650 Steam Refined	†38.00 –40.00	†38.00	35.00 –37.00
600 Flash	†41.00 –43.00	†41.00	†39.00 –40.00
625 Flash	†42.00 –45.00	†44.00 –45.00	†42.00
600 Warren E	†36.00	†33.00 –34.00	†30.00 –32.00
600 Oil City E	†35.00	†32.00 –33.00	†29.00 –30.00
600 D Filtered	†39.00	†36.00 –37.00	34.00 –35.00
Cold Test Stock, 40-50p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	50.00 –52.00	49.00 –50.00	49.00 –50.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	49.00 –51.00	48.00 –49.00	48.00 –49.00

WAX

PENNSYLVANIA Per pound, New York

122-124 white crude scale, a. m. p.	3.50 – 3.75	3.50 – 3.75	3.75 – 3.875
124-126 white crude scale, a. m. p.	3.50 – 4.00	3.75 – 4.00	3.75 – 4.125

‡One seller quoting.

OKLAHOMA

**124-126 White Crude Scale, a. m. p.	3.375– 3.50	3.375– 3.50	3.375– 3.50

CALIFORNIA

White crude scale, per pound, ton lots, a. m. p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	5.25 – 5.75	5.25 – 5.75	5.375– 5.75
30-34 fuel oil	4.75 – 5.00	4.75 – 5.00	4.875– 5.00
28-32 fuel oil	4.75 – 5.00	4.75 – 5.00	4.875– 5.00

OKLAHOMA

	Prices April 29	Prices April 22	Prices April 15
38-40 straw distillate	†3.375– 3.50	†3.50 – 3.625	†3.75
36-38 straw distillate	†3.25 – 3.375	†3.375– 3.50	†3.375– 3.625
32-36 gas oil, straw	2.625– 2.75	2.75 – 3.00	‡2.75 – 3.00
32-36 dark gas oil	2.50	2.50 – 2.75	‡2.50 – 2.75
32-36 zero gas oil	2.75	2.75 – 3.00	2.75 – 3.00
28-30 fuel oil (in bbls.)	$0.90 – 0.95	$0.90 –$0.95	$0.95 – 1.00
26-28 fuel oil (in bbls.)	$0.725– 0.75	$0.725– 0.75	$0.725– 0.775
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.65 – 0.70	$0.675– 0.725
22-26 fuel oil (in bbls.)	$0.55 –$0.60	$0.575– 0.625	$0.575– 0.625
18-22 fuel oil (in bbls.)	$0.55 – 0.575	$0.55 – 0.575	$0.55 – 0.575
16-18 fuel oil (in bbls.)	$0.50 – 0.575	$0.50 –$0.575	$0.50 – 0.55
14-16 fuel oil (in bbls.)	$0.50 – 0.55	$0.50 –$0.55	$0.50

‡Zero cold test gas oil sells for 0.25 cent higher.

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	3.50 – 3.625	3.875	3.875
36-38 straw distillate	3.50	3.50 – 3.75	3.50 – 3.75
32-36 gas oil	2.50 – 2.625	2.625– 2.75	2.625– 2.75
24-26 fuel oil	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
18-22 fuel oil	$0.625– 0.70	$0.65 – 0.70	$0.65 – 0.70

NORTH TEXAS

38-40 straw distillate	3.75	3.75	3.75 – 4.00
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.50	2.375– 2.50
32-36 St. reduced gas oil	2.25 – 2.375	2.25 – 2.50	2.375– 2.50
24-26 fuel oil (in bbls.)	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70
20-24 fuel oil	$0.65 – 0.675	$0.65 – 0.675	$0.65 – 0.675

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.375– 2.50	2.625	2.625– 2.75
30-32 gas oil	2.00 – 2.25	2.375– 2.50	2.50
18-22 fuel oil	$0.30 – 0.40	$0.30 – 0.40	$0.35 – 0.45

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.00 – 3.25	3.00 – 3.25	3.00
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00
16-20 fuel oil (in bbls.)	$0.70 – 0.75	$0.75 – 0.80	$0.70

ARKANSAS (Arkansas destination only)

32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00
32-36 gas oil	3.00 – 3.25	3.00 – 3.25	3.00
28-30 gas oil	2.875	2.875	2.875

CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.55 – 0.65	$0.55 –$0.65	$0.50 –$0.65
14-18 Bunker oil (per bbl.)	0.65 – 0.80	$0.65 –$0.75	$0.65 –$0.80
30-34 gas oil (per bbl.)	0.90 – 1.05	$0.95 –$1.05	$0.95 –$1.05
27 Plus Diesel oil (per bbl.)	0.90 – 1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50 – 7.625	7.50 – 7.625	7.50 – 7.625
Cream White	6.50 – 6.625	6.50 – 6.625	6.50 – 6.625
Light Amber	3.625	3.625	3.625
Amber	3.375	3.375	3.375
Red	3.125	3.125	3.125

PETROLEUM COKE

**OKLAHOMA

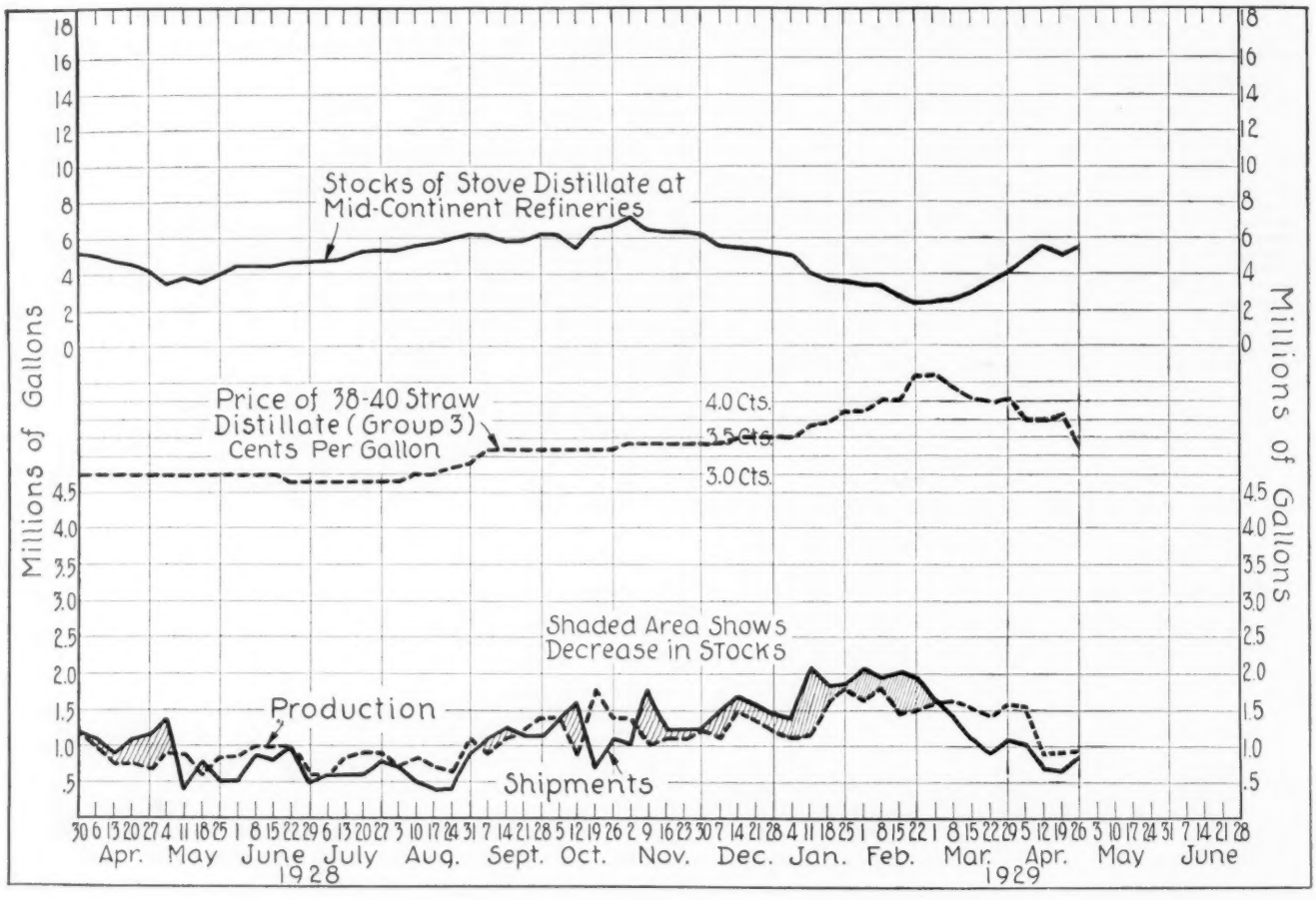
(Per ton in car lots)

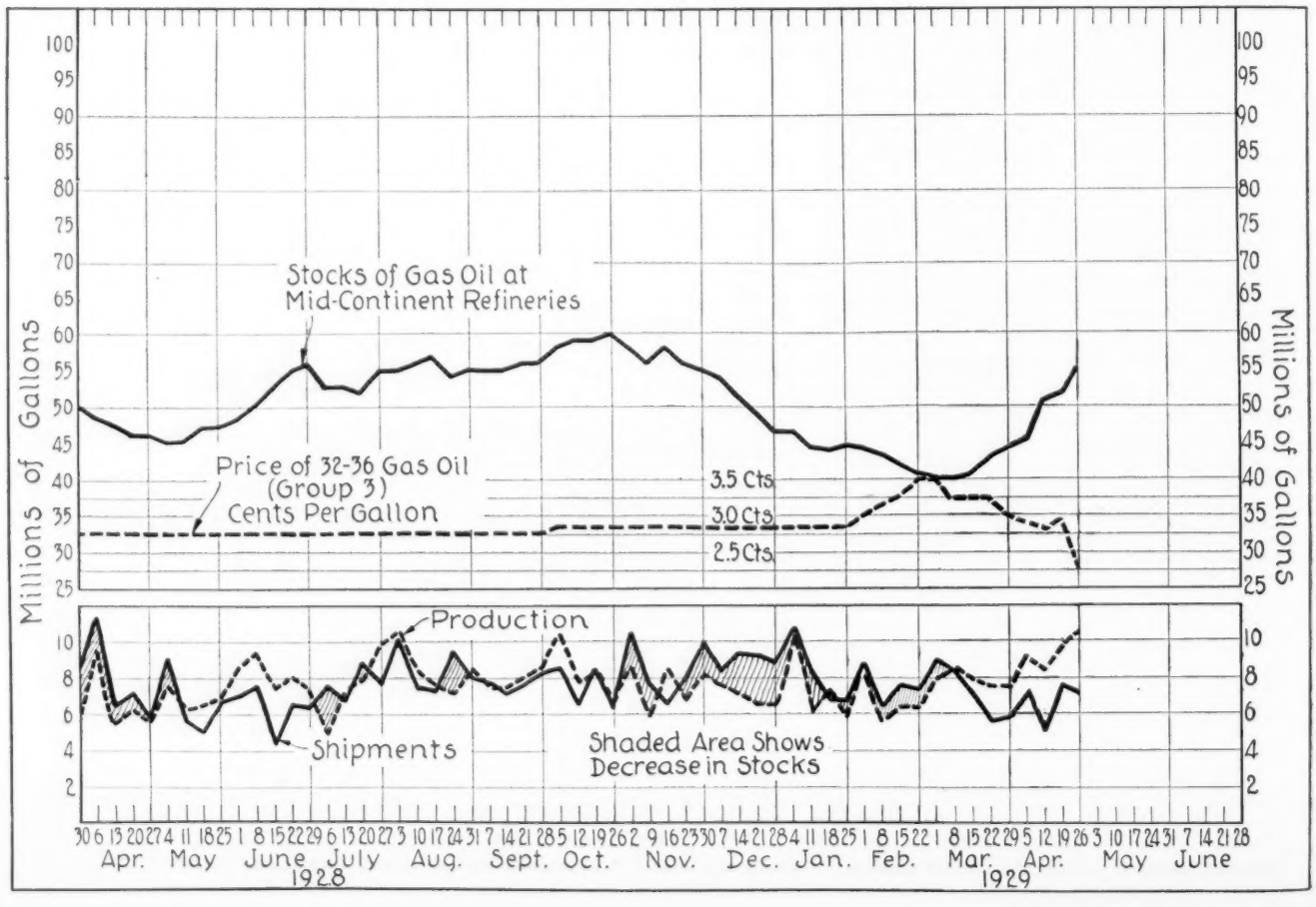
Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

†Prices Nominal ††Only One Refiner Quoting *Quotations only **Represents both sales and quotations

Barometer of Mid-Continent Refinery Market—Week Ending April 26

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 92 Plants to National Petroleum News


Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease in Stocks
Production
Shipments
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929


Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

Selling Features

In giving full credit to the Shell name and reputation for their part in the success of Shell Motor Oil, the quality of the oil itself must not be overlooked. In Shell Motor Oil *all* the features necessary for ideal lubrication are successfully combined.

1. Low Pour point.

2. Ample viscosity at all operating temperatures.

3. Extremely low carbon residue and of a type which is easily removed.

An oil of such specifications and operating characteristics would be a winner under any label... its possibilities when sponsored by Shell are demonstrated by the fact that jobbers handling Shell Motor Oil sold more than three times as many gallons during the year 1928 as in 1927.

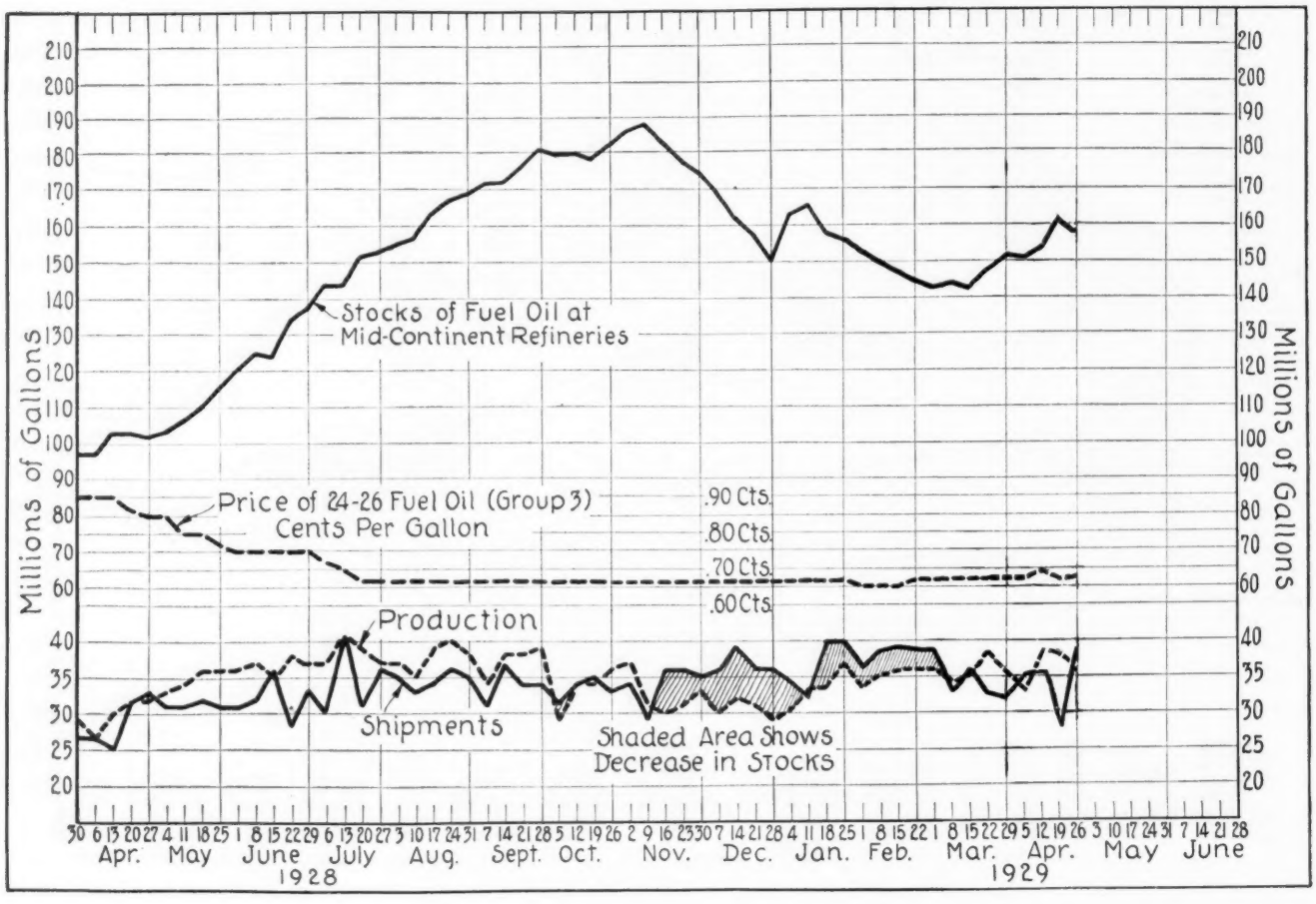
SHELL MOTOR OIL

SHELL PETROLEUM CORPORATION : : SHELL BLDG. : : SHELL CORNER : : ST. LOUIS

Branch Offices: Chicago, Ill. • • Cleveland, Ohio • • Kansas City, Mo. • • Tulsa, Okla.

Barometer of Mid-Continent Refinery Market—Week Ending April 26

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, from Reports Made by 92 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) Cents Per Gallon
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Production
Shipments
Shaded Area Shows Decrease in Stocks
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1928
1929

California Refinery Market

West Coast Navy Fuel Bids Surprise

LOS ANGELES, April 25

THE California export market for gasoline was unsettled this week with a wide range of prices quoted for U. S. Motor. Suppliers were offering this grade at 7 to 7.50 cents, although the lower figure was available for limited quantities only.

Other petroleum products for offshore trade were about as quoted last week. One cargo of fuel oil sold for spot shipment at $0.60. This figure has been considered the bottom price, although none has been sold as low as this for some time, except under contract.

Several independent refiners regretted they had not bid on the Pacific Coast Navy petroleum needs, as the figures on these bids, opened April 18, were disclosed. Many expected the figure for crude oil would approximate that given to the Japanese government, which, as was stated last week, was $0.5775 per barrel. Instead, the lowest bid submitted for the three and a half million barrels to be delivered at San Pedro harbor during the coming year was $0.7350 placed by Richfield Oil Co. Union Oil Co. offered to deliver one million barrels at $0.73 taken over six months, or $0.74 a barrel if distributed over the year. Standard Oil and Shell Oil companies submitted the present quoted price of $0.85. The Texas Co. and Associated Oil Co. did not quote.

Gasoline bids for the Navy will be opened May 3, and the resulting figures will be watched for with a great deal of interest, as it is felt they may indicate the attitude of the companies as to the coming gasoline prices. Several of the independent refiners have announced their intention of bidding on these contracts.

Prices for U. S. Motor gasoline in tank cars varied widely among local companies. One company stated that it had had 7.50 cents offered for 25 cars of U. S. Motor, but had refused the offer. Another seller stated he had an inquiry from Montana offering 7 cents for U. S. Motor, but he did not feel there was enough profit at this price to warrant handling it.

Natural gasoline was moving at from 7.75 to 8.75 cents, several spot sales being reported. The major companies were offering 7.50 cents flat, on contracts, for this commodity.

One of the major companies was reported to have sold some fuel oil for Arizona shipment at $0.45 per barrel, which is 10 to 20 cents under the general market. The specifications of this oil were not on a par with that offered to the government, so the prices cannot be compared.

Reversing their action of several weeks ago, many local gasoline retailers lowered their posted price to 17.50 cents, although some are still posting 18.50 cents.

Pennsylvania Market

Cylinder Stocks Soar

CLEVELAND, April 29.—Bright stocks and cylinder oils continued the features of western Pennsylvania markets last week. Demand for these oils showed no signs of slowing down and prices were up 2 to 4 cents per gallon. Gasoline and kerosene withstood another week of unfavorable weather. Fuel oil remained fairly scarce. Neutral oils were steady. Buyers' interest in wax continued at low ebb and prices eased off 0.125 to 0.25-cent per pound.

Sales of 600 steam refined cylinder stock for prompt shipment were reported over last week at prices ranging from 32 to 34 cents. Several sellers April 27 quoted 35 cents for prompt and one reported the sale of a small lot for May delivery at 36 cents. Goods were equally as hard to find at the higher prices as they were a week ago at around the 31 to 32-cent level. Other grades of cylinder oils were proportionately higher and offerings were extremely light.

Manufacturers of bright stock reported they had encountered very little difficulty in getting 50 cents last week for No. 8 color and 48 to 49 cents for No. 6-6½ color diluted. In line with the advance in 600 steam refined, prices for both grades of bright stock were raised. Most sellers today quoted 52 cents for light bright and 51 cents for dark, although some material still was available at prices prevailing toward the end of last week.

Refiners so far have failed to get a good break on gasoline weather. Heavy rains together with relatively low temperatures retarded movement of gasoline considerably. Prices, however, failed to show any reaction. U. S. Motor was still available from one refiner at 9 cents a gallon but the majority of refiners and marketers quoted from 9.25 to 9.75 cents. Higher gravity gasolines remained unchanged.

Kerosene movement likewise was slow. Some 45 water white goods was offered at 7.375 cents throughout last week. It was sufficient in volume to be representative of the general market. Prices for the higher gravity grades showed no recessions.

Fuel oil for cracking continued in good demand and prices in this section of the market were steady. Straw color 36-40 was available in rather limited quantities at 5.25 cents; most sellers quoted 5.50 to 5.75 cents.

Both 122-124 and 124-126 A.m.p. white crude scale was offered rather liberally last week at 3.50 cents a pound which represents a 0.25-cent reduction on the latter grade.

THE JIFFE AIR COMPRESSOR
Takes Care of Itself

Nothing is more annoying than an air compressor that is continually breaking down; nothing is more important to the filling station than a dependable free-air service. Recognition of these facts no doubt accounts for the increasing demand for the Jiffe. Its A-B-C simplicity —ONLY 3 MOVING PARTS—reduces repairs to a minimum. Its patented lubricating system assures you of negligible upkeep cost—uninterrupted trouble-free service—AND OIL-FREE AIR.

* * *

FEATURES

1. - Only 3 moving parts
2. - Thorough Lubrication
3. - 15 fewer parts
4. - No Oil in Delivered Air
5. - Negligible Upkeep
6. - Small Investment
7. - Many Sizes
8. - Result of 30 yr. study

* * *

Hundreds of satisfied users—from private garage owners to chain filling stations—acknowledge the fact that the Jiffe is the most efficient, most practical, and most economically operated air compressor available. It would pay *you* to investigate. Send today for our descriptive catalog.

JIFFE COMPANY
Successors to Dunning Compressor Co.
Holmesburg, Philadelphia, Pa.

Brand Your Gasoline An Individual Color

Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

Made to stay in gasoline; simple, safe, economical.

Several Shades of

RED GREEN BLUE
ORANGE PURPLE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED
11th & Monroe Sts. St. Louis, Mo.

Gulf Export Market

Gasoline Active; 185,000 Bbls. Sold

Staff Special
NEW YORK, April 27

GASOLINES continued to move well for export the past week, three cargoes were sold from the Gulf out of a total of five inquiries which were in the market.

One cargo was for approximately 65,000 barrels, of 64-66, 375 end point gasoline, U. S. Motor and 44 water white kerosene, purchased by a French buyer for June loading. A second was for 55,000 barrels of 64-66, 375 end point gasoline for shipment within the next 60 days and the third for approximately 65,000 barrels of 64-66, 375 end point gasoline and 44 water white kerosene for June loading. Both of the last two cargoes were purchased by French accounts.

Two other inquiries were still in the market Saturday, as far as could be learned. Both were from French buyers. One was for approximately 70,000 barrels of 64-66, 375 end point gasoline for loading in May, the other to be shipped within the next 60 days. Details of the latter inquiry could not be learned.

The Gulf market is in better shape now than it has been for some weeks and is expected to improve still further. Sellers are expecting higher prices and some of them wired their foreign accounts at the beginning of the week to that effect. This accounts in part for the number of inquiries received.

In spite of the healthy condition of the market prices were unchanged during the week. The cargoes which were placed were made on prices established some weeks ago by the Export Petroleum Association. Heavier oils were in good shape, especially gas oils, and bunker oils were moving fairly well.

Prices on all commodities for domestic shipment at the Gulf were likewise unchanged, although suppliers have been expecting an advance in prices for several days. U. S. Motor April 27, was being quoted mostly at 7.875 cents although there were some sellers endeavoring to obtain 8 cents. Weather conditions have been responsible for holding back the advance in prices, it was believed. Kerosene was in good shape at 7.25 cents and gas oil was scarce at 4 cents.

New York Domestic Market

Gasoline Improves; Prices Higher

Staff Special
NEW YORK, April 27

CONDITIONS in eastern gasoline markets have steadily improved during the past week, resulting in higher prices at New England points, both for California goods and regular U. S. Motor. Demand has been heavier for immediate shipment and numerous jobbers, expecting further price advances, are endeavoring to buy gasoline for over May.

While price advances have been confined to Portland, Boston, Providence, Philadelphia and Baltimore, it is no indication that the market is not in good shape at other points. Several refiners April 27 were considering advancing their prices and one of them, a main factor in eastern gasoline markets, reported his prices would probably be advanced this coming week. The matter hinges largely on the weather. In New York and vicinity it has rained 18 days during this month which naturally has retarded consumption and delayed advance in prices.

U. S. Motor at New York was moving Saturday at 9 to 9.25 cents with very little shading being done. One seller April 26 reported his price for that commodity was under the 9-cent figure although he admitted that he did not move as much gasoline on the spot market as most of the other New York refiners. One other seller reported he was obtaining 8.875 cents. Another refiner stated his price was 9.50 cents but he was the only seller who was quoting that high.

Early in the week the price of gasoline, both California and U. S. Motor at Baltimore, advanced 0.25 cent. The largest refiner in that district was the first to advance and by the middle of the week virtually all sellers were getting up to 9.50 cents for regular U. S. Motor and the same figure for California gasoline. The latter commodity, however, was selling at 9.25 cents minimum while regular U. S. Motor was moving as low as 9 cents. The same was true of Philadelphia gasolines.

The advance in New England prices was started April 25, when one company announced that its price in the Boston district was 10.875 cents. Two or three sellers, however, retained their price of 10.75 cents. Prices at Providence and Portland, where gasoline is also sold on a delivered basis, adjusted themselves accordingly.

While inquiries for May gasolines have been received by virtually all refiners, there are very few of them taking on any of that business. All of them feel certain that prices will be higher by at least 0.50 cent, and some look for 10-cent gasoline to be the minimum price at all points before the last of May. One refiner announced he was taking some business for over next month at 9.50 cents, f.o.b. New York harbor.

Prices on kerosene and other oils were unchanged. Eight cents was the price for water white at both New York and Philadelphia, while 8 to 8.50 cents covered quotations at Baltimore. Gas oils were in good shape although prices were at 4.75 to 5 cents, last week's levels, at both New York and Boston. The furnace oil market was unchanged at 6 to 6.50 cents and bunker oil was selling at $1.05 per barrel.

Wax Market

Prices Continue Downward

NEW YORK, April 27.—Demand for wax continued slow the past week and as a result prices on all grades were lower. There were no foreign buyers in the market and domestic buying was on a hand-to-mouth basis.

Prices fell from an 0.125 to 0.375 of a cent. A week ago white crude scale was selling from 3.50 to 4 cents while at the close of the past week prices ranged from 3.375 to 3.875 cents. One buyer reported that he had purchased a small lot of 122-124 grade at 3.25 cents. In was the only instance of material moving at that figure however, and was not considered a factor in the market although the price was in line with suppliers' ideas of the market during the coming week. Some were of the opinion that the market would

be even lower for that particular grade.

Yellow crude scale was selling at 3.375 cents, low, ranging to 3.625 cents which marks the first change in price for the past two or three weeks.

Without exception sellers of wax were predicting lower prices on all grades for the next several months. All foreign buyers are supplied with the possible exception of Mexico, where, according to one seller, there is no market because of the unsettled condition of governmental affairs. It is expected that Mexican buyers will not be in the market again for at least six months and some sellers estimate that it will be as much as a year before inquiries from that source are in the market.

Stocks are also expected to show an increase and further swell the amount of material which has already been placed in storage during the past three months. Government figures show an increase in stocks of approximately 50,000,000 pounds and some of the trade believe that the next figures will show an addition of 15,000,000 pounds.

Oil Men of New England To Meet Monthly

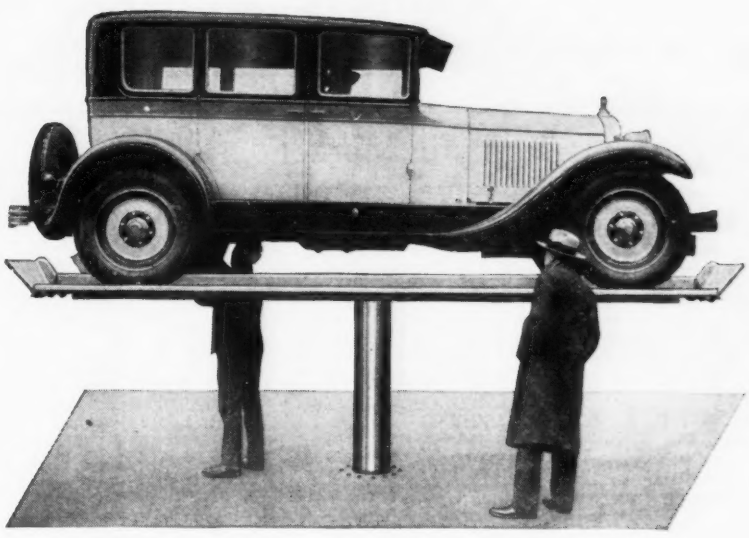
WORCESTER, Mass., April 27.—Albert R. Tattersall, newly elected president of the Independent Oil Men's Association of New England, presided at the regular monthly meeting of the association at the Chamber of Commerce at Boston on April 10. Jobbers and refiners from New England attended. Mr. Tattersall is treasurer of the F. C. Bellis Co. here.

The meeting place for each monthly meeting up to next October was chosen, with these associations members in charge:

In May, at Stoneham, Mass., J. C. Richdale in charge; June, Middletown, Conn., J. V. Porteous in charge; July, Wollaston, Mass., F. E. Bergfors; August, Fall River, Mass., A. A. Harrison; September, Providence, R. I., L. D. Pierce; October, Worcester, Mass., F. C. Bellis. Meetings will be held the second Wednesday of each month.

The speaker at the April 10 meeting was E. Grosvenor Plowman, merchandising adviser of the Associated Industries of Massachusetts, who talked on merchandising conditions of the present as compared with those of the past.

Blackmer Rotary Pump Co., Grand Rapids, Mich., has appointed C. K. Sencebaugh to succeed H. F. Robinson as district sales manager at Chicago. Mr. Sencebaugh was formerly with the Fairbanks Morse Co.



Rotary Lift Keeps Profits Up
Service Costs Down

No concession is ever made in building Rotary Lift that would sacrifice quality to effect a price . . .

Utilize inferior materials to effect a saving in manufacturing costs . . .

Lower the quality of its workmanship at the expense of safety and efficiency in operation.

Rotary Lift has always maintained a higher standard of quality in materials and workmanship . . . a standard that keeps profits up by keeping your service costs down.

Automobile Rotary Lift Co.
Memphis, Tenn.

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
Oil Burning Systems — *Complete Power Plant Equipment*

BETHLEHEM STEEL COMPANY, *General Offices, Bethlehem, Pa.*

District Offices

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Los Angeles Seattle Portland

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	April 29	April 22	April 15
New York harbor	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
Portland district	**11.00–11.375	**11.00–11.25	**11.00–11.25
Boston district	**10.75–10.875	**10.50–10.75	**10.50–10.75
Providence district	**10.75–10.875	**10.50–10.75	**10.50–10.75
Philadelphia district	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Baltimore district	9.00 – 9.50	9.00 – 9.25	9.00
Norfolk district	9.00	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.50	9.00 – 9.50	9.00 – 9.25
Philadelphia district	9.00 – 9.50	9.00 – 9.25	9.00
Baltimore district	9.25 – 9.50	9.00 – 9.25	9.00 – 9.25
WATER WHITE KEROSENE			
New York harbor	8.00	8.00	8.00
Philadelphia district	8.00	8.00	8.00
Baltimore district	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Boston district	4.75 – 5.00	4.75 – 5.00	4.50 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
Boston district	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
GRADE C BUNKER OIL†			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00
MEDICINAL OILS, RUSSIAN			
885-890 s.g., 325-330 vis.	$0.75 – 0.80	$0.80 – 0.90	$0.80 – 0.90
870-875 s.g., 150-155 vis.	$0.65 – 0.70	$0.67 – 0.77	$0.67 – 0.77
860-865 s.g., 80-85 vis.	.....	$0.65 – 0.75	$0.65 – 0.75

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. **Delivered prices. †Lighterage 5c per bbl. additional

New York Export Market

(Lubricating oils are per gal. in bbls.)

	April 29	April 22	April 15
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	*55.00 –56.00	*55.00 –56.00	*51.00 –52.00
600 D filtered	*43.00	*43.00	*37.00 –38.00
600 Warren E filtered	*40.00	*40.00	*36.00 –37.00
600 s.r. unfiltered	*38.00 –40.00	*38.00 –40.00	*34.00 –35.00
650 s.r., unfiltered	*45.00	*45.00	*40.00 –41.00
600 flash, s.r.	*46.00	*46.00	*43.00 –44.00
630 flash, s.r.	*50.00 –52.00	*50.00 –52.00	*49.00 –50.00
*Nominal			
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.50	19.50	19.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.00	19.00	19.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	33.00	33.00	33.00
500 vis. No. 6½ color	31.00	31.00	31.00
400 vis. No. 7¼ color	30.00	30.00	30.00
300 vis. No. 6 color	29.00	29.00	29.00
200 vis. No. 6 color	28.00	28.00	28.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.375– 3.75	3.50 – 3.75	3.75 – 3.875
124-126 A.m.p.	3.50 – 3.875	3.625– 4.00	3.75 – 3.875
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.50 – 4.75	4.50 – 4.75	5.00 – 5.125
125-127 A.m.p.	4.50 – 4.75	4.75 – 5.00	5.00 – 5.125
128-130 A.m.p.	4.625– 5.125	5.125	5.25 – 5.50
130-132 A.m.p.	5.875– 6.00	6.00	6.00 – 6.25
133-135 A.m.p.	6.125– 6.25	6.25 – 6.50	6.625– 6.875
135-137 A.m.p.	6.50 – 6.75	6.50 – 6.75	7.00
YELLOW CRUDE SCALE			
24-126 A.m.p.	3.375– 3.625	3.625	3.625

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	April 29	April 22	April 15
U. S. Motor	8.50	8.50	8.50
60-62 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.75	$1.75	$1.75
64-66, cases (cargoes)	$1.90	$1.90	$1.90
KEROSENE			
44 water white	8.75	8.75	8.75
41-43 prime white	7.75	7.75	7.75
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.75 – 3.875
*30 plus translucent gas oil	4.00	4.00	3.875
Grade C bunker oil	$0.875–$0.95	$0.875–$0.95	$0.875–$0.95
Grade C bunker oil, cargoes	$0.75 – 0.80	$0.75 – 0.80	$0.75 – 0.80
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.65	$0.65	$0.65
Grade C bunker oil, for bunkering purposes, taxes paid	$0.85	$0.85	$0.85
SOUTH TEXAS LUBRICATING OILS, (Viscosity at 100° F.: cold test 0) (Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
200 vis. No. 3 unfiltered pale	8.00 – 9.00	8.00 – 9.00	8.00 – 9.00
300 vis. No. 3 unfiltered pale	9.00 –10.00	9.00 –10.00	9.00 –10.00
500 vis. No. 3½ unfiltered pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750 vis. No. 4 unfiltered pale	13.00 –13.25	13.00 –13.25	13.00 –13.25
1200 vis. No. 5 unfiltered pale	16.00 –17.00	16.00 –17.00	16.00 –17.00
200 vis. No. 5-6 red oil	7.50	7.50	7.25 – 7.75
300 vis. No. 5-6 red oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500 vis. No. 5-6 red oil	9.50 –10.50	9.50 –10.50	9.50 –10.50
750 vis. No. 5-6 red oil	11.50 –12.00	11.50 –12.00	11.50 –12.00
1200 vis. No. 5-6 red oil	16.50	16.50	16.50

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	April 29	April 22	April 15
U. S. Motor gasoline	7.875	7.875	7.75
41-43 w.w. kerosene	7.25	7.25	7.25
*26-32 translucent gas oil	4.00	4.00	3.875
*Less than ½ of 1% sulfur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	April 29	April 22	April 15
Gasoline, U. S. Motor, 53-55 Gravity	7.00 – 7.50	7.00 – 7.75	7.00 – 7.75
Gasoline, U. S. Motor, blends and special cuts	7.50 –10.00	7.50 –10.00	7.50 –10.00
Gas Oil, 30-34, per barrel	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel Oil, 27 plus, per barrel	$0.875–$1.00	$0.875–$1.00	$0.875–$1.00
Bunker oil, 14-18, per barrel	$0.70 –$0.85	$0.70 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.50 – 6.25	5.50 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	April 29	
	Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	28–30	28
Gulf to U. K. or Continental ports*	17–18	17/6–18/6
North Atlantic to U. K. or Continental ports*	16	15/6–16/6
Calif. to North Atlantic ports (not E. of N. Y.)	65	95
Gulf to North Atlantic ports (not E. of N. Y.)**	21	35–40

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading 4c per bbl. additional.

Built for each other . . .

United they stand abuse

Quality Has No Substitute

SKELLY

THE new high-compression motor gives *extra* speed and power. The New TAGOLENE lends *extra* protection and endurance. Each was built for the other. Without this new-type lubricant your customer's new-type motor cannot reach the high efficiency he should expect. These two mates together prepare him for worry-free miles of peak motor performance. The New TAGOLENE will prepare you for peak profits in repeat sales.

Skelly Oil Company

El Dorado, Kansas — Tulsa, Oklahoma

Kansas City — Omaha — Minneapolis

RADIO—Listen in Friday evenings at 9 o'clock to the Skellodians over NBC network: WLS, Chicago; KSD, St. Louis; WOC, Davenport; WOW, Omaha; WDAF, Kansas City; KSTP, St. Paul; KOA, Denver, and KVOO, Tulsa.

AT RETAIL 30c A QUART

THE NEW
TAGOLENE
MOTOR OIL
MADE TO STAND ABUSE

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect April 29, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	14	2	16	20	13
Newark, N. J.	14	2	16	20	13
Annapolis, Md.	14	4	18	22	13
Baltimore, Md.	14	4	18	22	12
Cumberland, Md.	14	4	18	22	13
Washington, D. C.	14	2	16	20	12
Danville, Va.	14	5	19	23	13
Norfolk, Va.	14	5	19	23	13
Richmond, Va.	14	5	19	23	13
Roanoke, Va.	14	5	19	23	13
Petersburg, Va.	14	5	19	23	13
Charleston, W. Va.	14	4	18	22	13
Keyser, W. Va.	14	4	18	22	13
Parkersburg, W. Va.	14	4	18	22	13
Wheeling, W. Va.	14	4	18	22	13
Charlotte, N. C.	14	5	19	23	13
Hickory, N. C.	14	5	19	23	13
Mt. Airy, N. C.	14	5	19	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	14	6	20	24	13
Columbia, S. C.	14	6	20	24	13

CONTINENTAL OIL

Denver, Colo.	15	3	18	21	15.5
Pueblo, Colo.	15	3	18	21	15.5
Grand Junc., Colo.	18.5	3	21.5	24.5	19
Casper, Wyo.	15	4	19	22	14
Cheyenne, Wyo.	16	4	20	23	15.5
Butte, Mont.	19.5	5	24.5	27.5	20
Helena, Mont.	19.5	5	24.5	27.5	20
Salt Lake City, Utah	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	26.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	15.5	3	18.5	22.5	15.5
Fresno, Cal.	16	3	19	23	16.5
San Francisco, Cal.	16	3	19	23	15.5
Reno, Nev.	20	4	24	28	19
Portland, Ore.	16.5	3	19.5	23.5	16.5
Seattle, Wash.	16.5	2	18.5	22.5	16.5
Spokane, Wash.	20.5	2	22.5	26.5	20.5
Tacoma, Wash.	16.5	2	18.5	22.5	16.5

Note: 3c per gal. discount to dealers off t.w. price thru territory.

S. O. LOUISIANA

Little Rock, Ark.	12	5	17	21	13
Alexandria, La.	11	4	15	19	†16
Baton Rouge, La.	10	4	14	18	†14.5
Lake Charles, La.	††12.5	4	††16.5	††20.5	†16
New Orleans, La.	*11.5	4	*15.5	*19.5	†16
Shreveport, La.	11	4	15	19	†15
Lafayette, La.	**12	4	**16	**20	†14
Bristol, Tenn.	15	5	20	23	14
Chattanooga, Tenn.	14.5	5	19.5	23.5	16
Knoxville, Tenn.	15	5	20	24	16
Nashville, Tenn.	12	5	17	21	16
Memphis, Tenn.	11	5	16	20	12.5

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	14	5	19	20	15.5
Catlettsburg, Ky.	14	5	19	20	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	15
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	16	5	21	23	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	15	5	20	22	13
Natchez, Miss.	15.5	5	20.5	22.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	14	4	18	20	13
Mobile, Ala.‡	17	4	21	23	15
Montgomery, Ala.*	18	4	22	24	16.5
Atlanta, Ga.	17	4	21	23	†16.5
Augusta, Ga.	17	4	21	21	†15.5
Macon, Ga.	17	4	21	23	†16.5
Savannah, Ga.	16	4	20	22	†15.5
Jacksonville, Fla.	17	5	22	24	14.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	24	14.5
Pensacola, Fla.**	18	5	23	25	14.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

Latest Changes In Tank Wagon Prices

Gasoline Changes

S. O. Kentucky—Correction: The prices of 19c t.w. and 20c s.s., including 5c tax, at Ashland and Catlettsburg, Ky., which were published on page 140 of the April 24 issue of NATIONAL PETROLEUM NEWS, went into effect March 23 as reported, and are the prices that should have been shown in the tank wagon table in all subsequent issues. The same applies for the Augusta and Macon prices.

S. O. Ohio—T.w. gasoline cut 1c, s.s. 2c, thru Tuscarawas county, which includes New Philadelphia, Uhrichsville, Dover, Newcomerstown, etc., making both t.w. and s.s. prices 17c including 4c tax, **April 24.** Dealers and commercial consumers get 3c off t.w. price.

T.w. and s.s. prices cut 2c, at Wapakoneta (in Auglaize county), Urbana (Champaign county), and Jamestown (Greene county), to 16c and 17c respectively, including tax, **April 24.** Dealers and commercial consumers discount is 1c per gal. off t.w. price.

S. O. Louisiana—T.w. and s.s. prices cut 2c, Memphis, to 16c and 20c respectively, including 5c tax, **April 23.**

T.w. price only cut 2c, Nashville, to 17c including 5c tax, **April 19.** S.s. unchanged at 21c.

Magnolia Petroleum—T.w. price gasoline cut 3c, s.s. 1c, Oklahoma City, to 13c and 17c respectively, including 3c tax, **April 18.** Discount of 2c to dealers and power trade eliminated that date.

Kerosene Changes

Magnolia Petroleum — Kerosene advanced 1c, San Antonio, to 12c t.w. **April 2.**

S. O. NEBRASKA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Omaha, Neb.	14.25	4	18.25	20.25	13.25
McCook	15.75	4	19.75	21.75	14.75
Norfolk	14.75	4	18.75	20.75	13.75
North Platte	15.75	4	19.75	21.75	14.50
Scottsbluff	15.75	4	19.75	21.75	14.25

S. O. INDIANA

	Gasoline				Oil
			Total		
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	14	0	14	15	13
Decatur, Ill.	14.2	0	14.2	15.2	13.1
E. St. Louis, Ill.	13.4	0	13.4	14.4	12.2
Joliet, Ill.	14.4	0	14.4	15.4	13.3
Peoria, Ill.	14.2	0	14.2	14	13.1
Quincy, Ill.	14.2	0	14.2	15.2	12.9
Indianapolis, Ind.	14.2	4	18.2	19.2	14.2
Evansville, Ind.	14	4	18	19	14
South Bend, Ind.	14.4	4	18.4	19.4	14.4
Detroit, Mich.	14.8	3	17.8	18.8	14.7
Grand Rapids, Mich.	14.7	3	17.7	18.7	14.6
Saginaw, Mich.	14.9	3	17.9	18.9	14.8
Green Bay, Wis.	14.6	2	16.6	17.6	13.4
Madison, Wis.	14.3	2	16.3	17.3	13.1
Milwaukee, Wis.	14.1	2	16.1	17.1	12.9
La Crosse, Wis.	15.2	2	17.2	18.2	14
Minneapolis, Minn.	15.2	2	17.2	18.2	13.9
Duluth, Minn.	15.5	2	17.5	18.5	13.9
Mankato, Minn.	15.1	2	17.1	18.1	13.7
Des Moines, Ia.	14.5	3	17.5	18.5	13.3
Davenport, Ia.	14.5	3	17.5	18.5	13.3
Sioux City, Ia.	14.1	3	17.1	18.1	12.9
Mason City, Ia.	14.5	3	17.5	18.5	13.3
St. Louis, Mo.	*13.9	2	15.9	16.9	12.3
Kansas City, Mo.	†14.9	2	16.9	17.9	11.6
St. Joseph, Mo.	†14.5	2	16.5	17.5	12.2
Fargo, N. D.	16.9	2	18.9	19.9	15.9
Grand Forks, N. D.	17.2	2	19.2	20.2	16.2
Minot, N. D.	16.9	2	18.9	19.9	15.9
Pierre, S. D.	15	4	19	20	14.4
Huron, S. D.	15.3	4	19.3	20.3	14.7
Wichita, Kans.	12.8	3	15.8	16.8	11.8
Bartlesville, Okla.	12.5	3	15.5	16.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Wilmington, O.	*11	4	*15	15	14
Wapakoneta, Urbana Jamestown	††12	4	††16	17	14
Fayette & Tuscarawas counties, Hamilton & Findlay	**13	4	**17	17	14
†At Other Competitive Points	*13	4	*17	18	14
Elsewhere in Ohio.	*14	4	*18	19	14

†These points are: all of Columbiana county, including East Liverpool, Wellsville, Salem, Columbiana and Lisbon; all of Franklin county, including Columbus, Westerville, Worthington and Rome; all of Scioto county, including Portsmouth; Fairfield county, including Lancaster; Lorain county, including Elyria, Lorain, etc.; Summit county, including Akron, Barberton, etc.; and these additional points: Marion, Lima, Perrysburg, Bryan, Hicksville, Mansfield, Celina, Fostoria, Piqua and Piketon.

*Dealers and commercial accounts get 2c per gal. off t.w. price.

**Dealer and commercial consumers' discount at these points is 3c per gal. off tank wagon price.

††Dealer and commercial consumer discount is 1c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	3	15	18	13
Oklahoma City	10	3	13	17	12
Tulsa, Okla.	12	3	15	18	11
Fort Smith, Ark.†	12	†3	15	19	12
Little Rock, Ark.	12	5	17	21	13
Texarkana, Ark.*	14	*2	16	20	13
Dallas, Tex.	11	2	13	17	13
Fort Worth, Tex.	11	2	13	16	13
Houston, Tex.	12	2	14	18	13
San Antonio, Tex.	11	2	13	17	12
El Paso, Tex.	15	2	17	20	16

*Within city of Texarkana, the state tax on gasoline is 2c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 3c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both Colorado, 1/10c on both; Florida, 1/8c on both; Indiana, 2/25c on both; Kansas, 1/50c on both; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c on both; Missouri, 1/50c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only: Iowa, 13/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect April 29, 1929

S. O. NEW YORK

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
New York City	17	0	17	*19	15
Albany, N. Y.	13	0	13	14	15
Buffalo, N. Y.	14	0	14	15	14
Rochester, N. Y.	14	0	14	15	13
Syracuse, N. Y.	14	0	14	15	12
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	22	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	†16	*	†16	21	14
Philadelphia, Pa.	†16	*	†16	21	14
Allentown, Pa.	†16	*	†16	21	14
Erie, Pa.	†13	*	†13	18	14
Scranton, Pa.	†16	*	†16	21	14
Altoona, Pa.	†16	*	†16	21	14
Dover, Del.	†16	3	†19	21	14
Wilmington, Del.	†16	3	†19	21	14
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	14	2	16	17	15
Providence, R. I.	13	2	15	16	15
Hartford, Conn.	16	2	18	20	14
New Haven, Conn.	15	2	17	18	15
Atlantic City, N. J.	16	2	18	20	13
Camden, N. J.	16	2	18	20	13
Trenton, N. J.	16	2	18	20	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	16	4	20	22	13
Hagerstown, Md.	16	4	20	22	13
Richmond, Va.	16	5	21	23	13
Wilmington, N. C.	16	4	20	22	13
Brunswick, Ga.	17	4	21	23	**16.5
Jacksonville, Fla.	17	5	22	24	14.5

*3-cent state tax is collected by retail dealer and paid by him directly to state.

†The Atlantic Refg. Co. recognizes a 2c a gal. discount from its posted tank wagon market on sales to dealers for purposes of resale.

The company also recognizes a maximum discount of 2c per gallon to commercial accounts under contract for one year.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		17	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.

Petroleum Spirits

Tank Cars (Solvent)	
New York refineries	11.00
New England refineries	11.00
Philadelphia refineries	11.00
Tank Wagon or Steel Barrels	
New York City	17
New England	19
New Jersey	16
Pennsylvania	16–18

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	19.5	5	24.5	28	21
Ottawa	15.5	5	20.5	24	21
Cochrane	24.5	5	29.5	..	26
Ft. William	22.5	5	27.5	31	22.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	3	30.5	34	27.5
Calgary	23.5	3	26.5	30	23.5
BRITISH COLUMBIA					
Vancouver	22	3	25	29	23
QUEBEC					
Montreal	19.5	5	24.5	28	22
Quebec City	21.5	5	26.5	30	23
Three Rivers	21.5	5	26.5	30	23
NEW BRUNSWICK					
St. John	24	5	29	33	25
Moncton	24	5	29	33	25
NOVA SCOTIA					
Halifax	24	5	29	33	25
Sydney	24	5	29	33	25
PRINCE EDWARD ISLAND					
Charlottetown	24	5	29	33	25

Note: In districts surrounding these points 1c additional is added to city price.

Be Ready When Fire Strikes

Be ready *before* you have a fire.

Make sure that your refinery, bulk plant and filling stations are fully protected *now*. After the fire will be too late.

The Pyrene Company makes *all* types of fire extinguishers. Since 1907, Pyrene has been the outstanding name in fire protection.

The Pyrene Fire Protection Engineers will make a complete survey of your property. They will point out the danger points and suggest the correct type of extinguisher to locate at each point. Write for this service which is free and places you under no obligation.

PYRENE MFG. COMPANY
NEWARK, NEW JERSEY

Branches: Atlanta - Chicago - Kansas City - San Francisco

Makers of Fire Equipment since 1907 and Pyrene Tire Chains

Cross Cracking Plants

THE M. W. KELLOGG CO.
225 Broadway • New York

Houston, Texas ..... *1514 Petroleum Bldg.*
Tulsa, Okla ..... *Philtower Bldg.*
Los Angeles, Cal ..... *1031 So. Broadway*

Clean more often
—*repaint less*

STORAGE tanks can be kept clean and bright, and will need repainting much less frequently if periodically cleaned the Oakite way.

A solution of an Oakite material in water sprayed on or applied with brushes speedily removes all dirt, grime and oily deposits leaving surfaces amazingly fresh and new looking. No fumes —no danger—no fire hazard. Equally effective for cleaning insides of tanks, and for many other jobs.

Let one of our Service Men call and tell you about the time and work that Oakite materials and methods save. Write us—no obligation.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Manufactured only by

OAKITE PRODUCTS, INC.
42C Thames St., New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE—RED OILS
WAX—PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity—this Company enjoys an International Reputation

JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London—Hamburg

Cable Address—JASBER Oil City *All Codes*

A LUMBER WAGON AND A ROLLS-ROYCE

Are somewhat different and yet alike, inasmuch as they both have four wheels. The same holds true in the difference between the requirements of a gasoline tank of the old fashioned wagon delivery and the modern bus chassis. Brown Certified Tanks are custom built for the particular chassis for which they are intended. We are specialists in this line and ask that you let us figure on your requirements.

Speed with Safety

BROWN SHEET IRON & STEEL CO.

964 Berry Ave. **St. Paul, Minn.**

DON'T DELAY—SIGN THE COUPON AND LET US KNOW WHAT YOU WILL NEED.

Check Items on which you want prices.

Complete Bulk Station.....Number of Tanks.....Size.....

Filling Station Tanks.....Size.....Pumps.....

Truck Tanks.....Size.....Compts.....

Other Equipment.....

Name.....Address.....

Crude Oil Prices (in Effect April 29, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$4.10
Bradford District Oil in National Transit Lines (Bradford District)	4.10
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	4.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.50
Corning Grade in Buckeye Pipe Lines (Ohio)	1.75
Corning, O., heavy grade	1.65
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.65
Ragland Grade in Cumberland Pipe Lines (Kentucky)	$0.60

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.55

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective April 26, 1929

Wooster	$1.75	Princeton	$1.60
Lima	1.65	Illinois	1.60
Waterloo	1.20	Plymouth	1.18
Indiana	1.42	West Kentucky	1.68

Pure Oil Co.

Midland, Midland County, Michigan	$1.50

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$1.90
Oil Springs	1.97

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Jan. 25, 1929

Below 25	$0.60	35-35.9	$1.17
25-25.9	0.66	36-36.9	1.20
26-26.9	0.72	37-37.9	1.23
27-27.9	0.78	38-38.9	1.26
28-28.9	0.84	39-39.9	1.29
29-29.9	0.90	40-40.9	1.32
30-30.9	0.96	41-41.9	1.35
31-31.9	1.02	42-42.9	1.38
32-32.9	1.08	43-43.9	1.41
33-33.9	1.11	44 and above	1.44
34-34.9	1.14		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Jan. 24, 1929, same schedule as Prairie in above fields.

Mirando, Tex	$0.80
Salt Flat, Tex	1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Jan. 25, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.60	29-29.9	$0.80
26-26.9	0.65	30-30.9	0.90
27-27.9	0.70	31-31.9	1.00
28-28.9	0.75		

Glassecock, Crane, Upton, Winkler Counties	0.65
Chalkfield (Howard Co.)	0.65
Iatan district	0.93
Corsicana heavy	0.80
Luling	0.80

Carter Oil Co.

(Oklahoma and Kansas)

Jan. 24, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Jan. 24, 1929

Hutchinson and Carson Counties:

Below 32	$0.72	38-38.9	$0.96
32-32.9	0.78	39-39.9	0.99
33-33.9	0.81	40-40.9	1.02
34-34.9	0.84	41-41.9	1.05
35-35.9	0.87	42-42.9	1.08
36-36.9	0.90	43-43.9	1.11
37-37.9	0.93	44 and above	1.14

Wheeler County:

Below 30	$0.70	37-37.9	$1.03
30-30.9	0.76	38-38.9	1.06
31-31.9	0.82	39-39.9	1.09
32-32.9	0.88	40-40.9	1.12
33-33.9	0.91	41-41.9	1.15
34-34.9	0.94	42-42.9	1.18
35-35.9	0.97	43-43.9	1.21
36-36.9	1.00	44 and above	1.24

Gray County:

Below 29	$0.69	37-37.9	$1.08
29-29.9	0.75	38-38.9	1.11
30-30.9	0.81	39-39.9	1.14
31-31.9	0.87	40-40.9	1.17
32-32.9	0.93	41-41.9	1.20
33-33.9	0.96	42-42.9	1.23
34-34.9	0.99	43-43.9	1.26
35-35.9	1.02	44 and above	1.29
36-36.9	1.05		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, Howard and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective Jan. 26, 1929

Below 28	$0.78	36-36.9	$1.20
28-28.9	0.84	37-37.9	1.23
29-29.9	0.90	38-38.9	1.26
30-30.9	0.96	39-39.9	1.29
31-31.9	1.02	40-40.9	1.32
32-32.9	1.08	41-41.9	1.35
33-33.9	1.11	42-42.9	1.38
34-34.9	1.14	43-43.9	1.41
35-35.9	1.17	44 and above	1.44

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	0.90
Bellevue	1.20
*Urania, La.	1.00
†East El Dorado	0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Jan. 25, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.60; 25-25.9, $0.66; 26-26.9, $0.72; 27-27.9, $0.78.

Jan. 26, Magnolia Petroleum met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Jan. 28, 1929

Below 28	$0.70	30-30.9	$0.82
28-28.9	0.74	31-31.9	0.86
29-29.9	0.78	32 and above	0.90

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Jan. 26, 1929

Grades A	$1.20	29-29.9	$1.15
Grades B:		30-30.9	1.17
Below 25	1.05	31-31.9	1.19
25-25.9	1.07	32-32.9	1.21
26-26.9	1.09	33-33.9	1.23
27-27.9	1.11	34-34.9	1.25
28-28.9	1.13	35 and above	1.27

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only

Shell Enters New England As Marketer

BOSTON, April 27.—Official entry of the Shell interests into the marketing end of the oil business in New England was made April 18 when the Shell Eastern Petroleum Products, Inc., sold the first gallon of gasoline from one of its recently acquired service stations here.

The company was organized as a subsidiary of the Shell Union Oil Co., a member of the Royal Dutch Shell group, to enter the New England and North Atlantic states as a marketer. This follows the acquisition some months ago by the Shell interests of the New England Oil Refining Co.'s properties in Massachusetts, including its 35,000-barrel refinery at Fall River, distributing plants, service stations and other properties.

A luncheon at Hotel Statler April 18 heralded the official opening of the company's business.

A. F. Carter, president of the Shell Eastern Petroleum Products, Inc., pumped the first gallon of gasoline into the automobile of Frank J. Fahey, of the Massachusetts Council and the New England Council on the opening day.

Other company officials attending the luncheon and opening ceremonies were: W. J. Filer, vice president; U. F. O'Brien, secretary and treasurer; T. S. Marshall, advertising manager; H. A. Browne, traffic manager and H. W. Boynton, distribution manager.

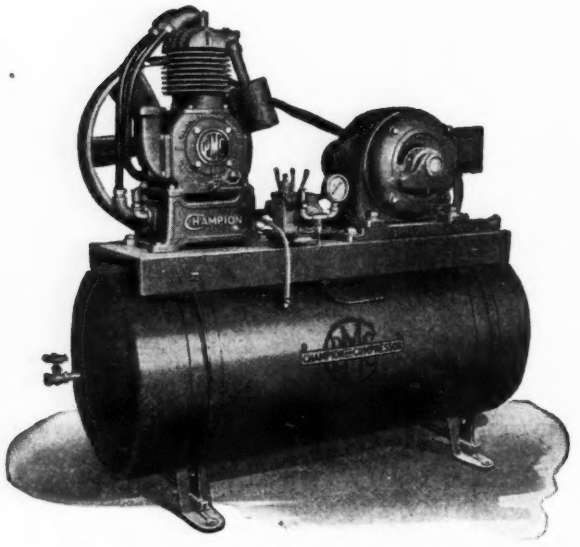
Crude Price Changes

OIL CITY, April 27.—On April 27 Joseph Seep Purchasing Agency advanced Somerset, Ky. and Cabell, W. Va. crudes 15 cents per barrel, making new prices $1.65 and $1.50 respectively. Last previous change on these two grades was 10 cent cut on March 12.

* * *

FINDLAY, O., April 27.—On April 26 Ohio Oil Co. advanced these Central States crudes: Wooster, 13 cents; Lima, Indiana, Illinois, Princeton and Western Kentucky, 15 cents. New prices are: Wooster, $1.75; Lima, $1.65; Indiana, $1.42; Illinois and Princeton, $1.60; and Western Kentucky $1.68. Last previous change was 10 to 15 cent reduction on Jan. 25.

On Highway Or Boulevard
CHAMPION *Equipment*



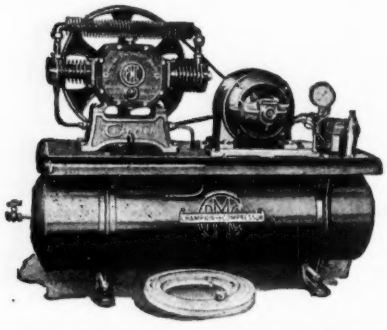
Above is shown Champion OE-41 (3 H.P.) also OE-40 (2 H.P.) two stage, Automatic Ball Bearing, 2 Cylinder, Vertical Air Compressor; 60 gal. tank, 200 lbs. working pressure.

EVERYWHERE
BEST BY COMPARISON

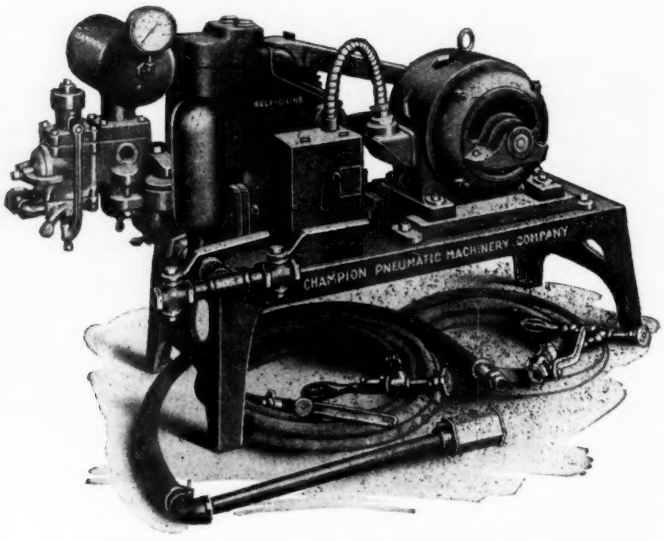
Champion Equipment proves its leadership by actual comparison. The greater dollar value of Champion Air Compressors, Service Towers, Car Washers, and Paint Spray Units lies in the material and workmanship employed on the component parts, plus careful standardization of construction and assembly. Strength, economy and long lasting efficiency are what the careful buyer gets in Champion Equipment.

Send for Champion Catalog describing the entire line of Champion Air Compressors, Service Towers, Car Washers, and Paint Spray Units.

Secure Champion prices before you buy.



N-13 Two Stage Automatic Ball Bearing Compressor. 32 gal. tank, 200 lbs. working pressure. ¾ H.P.



Champion Car Washers—Champion CW-2 Self-Oiling Car Washer completely equipped with all fittings—two 25 foot lengths of high pressure hose, Champion adjustable washing guns, and suction hose assembly.

COUPON

Champion Pneumatic Machy. Co.
8168 So. Chicago Ave.,
Chicago, Ill.

Please send complete information regarding:

- ☐ Champion Automatic Ball Bearing Air Compressors
- ☐ Champion Service Towers
- ☐ Champion Compressors for Paint Spraying
- ☐ Champion Self Oiling Car Washers

Name .....

Address .....

City and State .....

CHAMPION PNEUMATIC MACHINERY CO.
8168 South Chicago Ave., Chicago, Ill., U. S. A.

Crude Oil Prices (in Effect April 29, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Jan. 25, 1929)

‡Salt Creek 29-29.9	$0.90
" " 30-30.9	0.96
" " 31-31.9	1.02
" " 32-32.9	1.08
" " 33-33.9	1.11
" " 34-34.9	1.14
" " 35-35.9	1.17
" " 36-36.9	1.20
" " 37 and above	1.23
Elk Basin	1.36
Grass Creek light	1.36
Big Muddy	$1.28
Lance Creek	1.38
Rock Creek	1.18
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.38
‡Cat Creek, Mont.	1.48
Sunburst, Mont.	1.65
‡Hogback, N. Mex.	1.53
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick †Kern River	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14-14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15-15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16-16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17-17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18-18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19-19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20-20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21-21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22-22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23-23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24-24.9	1.01	1.01	1.01	1.01	....	.97	.98	....	.90	.90	.90	.88	.88	.98	over	.94	.94
25-25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26-26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27-27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28-28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29-29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30-30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31-31.9	1.30	....	....	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32-32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33-33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	.140	1.22	....	....	....	....	1.34
34-34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35-35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	....	1.30	....	....	....	....	....
36-36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37-37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38-38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39-39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40-40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Kern River down to 12° gravity is 50c; 11-11.9 is 45c.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	April 29	April 22
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Caustic Soda wks.	$0.90-1.00	$0.90-1.00
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.50-4.50	$3.50-4.50
Liquid Chlorine, tank cars, wks. lb.	3.50-5.00	3.50-5.00

Compounders' Supplies

	April 29	April 22
Vegetable Oils		
Linseed carloads, spot lb.	10.20	10.20
Tanks, spot	9.30	9.30
Soya Bean, Tanks, coast, lb.	9.50	9.50
Oleic Acid		
Distilled, tanks lb.	10.25	10.25
Distilled, bbls. lb.	11.125	11.125
Saponified, tanks lb.	10.50	10.50
Saponified, bbls. lb.	11.375	11.375
Lard Oils		
Prime Winter Strained lb.	15.25	15.25
Extra Winter Strained lb.	13.375	13.375
Extra lb.	13.125	13.125
Extra No. 1 lb.	12.875	12.875
No. 1 lb.	12.625	12.625
No. 2 lb.	12.375	12.375
Tallow oil lb.	11.25	11.25
Neatsfoot Oil		
Pure, bbls. lb.	14.75	14.75
Extra, bbls. lb.	13.00	13.00
No. 1 bbls. lb.	12.75	12.75
Cold Pressed lb.	18.75	18.75
Fish Oils		
Menhaden Oil		
Light Pressed gal.	71	71
Light Pressed, tank cars, N.Y. gal.	65	65
White bleached gal.	77	77
Yellow bleached gal.	73	73
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y. gal.	49	50
Steam distilled turpentine, Savannah gal.	45	47
Gum turpentine, N. Y. gal.	53.50	56
Gum turpentine, f.o.b. cars Savannah gal.	50	49.50
Wood Rosin F, N. Y. bbl.	$7.40	$7.40
Wood Rosin F, Savn'h. bbl.	$6.60	$7.20
Gum Rosin B, N. Y. bbl.	$7.25	$7.60
Gum Rosin B, f.o.b. cars Savannah bbl.	$6.55	$6.90
Rosin oil, pure gal.	61	61
Rosin oil, compounded gal.	50	51
Pine Tar		
Kiln burnt bbl.	$13.00-14.00	$13.00-14.00
Retort bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	55-62	55-62

Oil Shares Offers Stock in Europe

NEW YORK, April 27.—An offering of stock in Oil Shares, Inc., the oil investment trust, will be made in Europe following arrangements for the sale just concluded by the company with British Foreign & Colonial Corp., Ltd., of London. The offering in the London Stock Exchange has been at $72.50 per unit of one share of preferred stock and one share of no par common stock.

Report of Oil Shares, Inc., for quarter ended March 31, 1929, shows average capital invested was $10,438,423, which earned net income of $416,581 after charges and reserve for federal taxes. After providing for quarterly dividends accrued to April 15, 1929, on the preferred stock, amounting to $118,787, there remained net balance available for the common stock of $297,794. This was equal to $1.88 a share on the average of 158,500 common shares outstanding during the period.

Since the beginning of business April 10, 1928, to March 31, 1929, total net income was $911,988 on average capital of $8,338,575 invested for the period.

Southern Line Brings Almost a Million

CLEVELAND, April 29.—The Southern Pipe Line Co. is to receive $955,056 from the Manufacturers' Light & Heat Co. for one of its pipe lines from the West Virginia-Pennsylvania state line to Millway, Pa., near Philadelphia, Forrest M. Towl, president, has written stockholders. He has assured them that the distribution of $10 a share which he announced earlier this month will be made without the sale of any of the securities the company holds.

Southern still has two lines from the West Virginia line to Millway which are carrying less than half their capacity in oil, Mr. Towl wrote.

Sinclair Seeks Lower Levy On Pipe Line

LINCOLN, Nebr., April 27.—Sinclair Pipe Line Co. has applied for reduction of the tax assessment against its Wyoming line in the eight Nebraska counties through which it passes. The line has not transported any oil since October and pumps have already been removed. It is said the entire line which runs from Wyoming to near Kansas City, will be junked within a year.

The company's request that the assessment be reduced 50 per cent has been declined but a counter proposal may be made by the counties.

Teagle Elected to Board Of Chemical Concern

CLEVELAND, April 29.—The interest of Walter C. Teagle, president, Standard Oil Co. (N. J.) in the American I. G. Chemical Corp., the new holding company for German dye and chemical interests in the United States, is only personal and the New Jersey company has no financial interest in the German concern, it was announced by the company in this statement issued by Northrop Clarey:

"W. C. Teagle, president of the Standard Oil Co. (N. J.) today in confirming the announcement that he will serve as a member of the board of directors of the newly organized American I. G. Chemical Co., stated that this resulted from a close and pleasant personal relationship of some years' standing with the leaders of the I. G.

"This action does not mean that the Standard Oil Co. (N. J.) is departing from its basic policy of confining its activities and investments to the oil industry. It is not interested in the chemical business save to the extent that certain classes of the industry known as chemical are in reality departments of or inseparably connected with the present highly organized business of producing, transporting, refining and marketing oil, natural gas and their products.

"The Standard Oil Co. (N. J.) has no financial interest in the American I. G. Chemical Corp. It has for some years past enjoyed a very close relationship with certain branches of the research work of the I. G. Farbenindustrie (I. G. Dyes) which bear closely upon the oil industry. Two years ago it made a definite contract with the I. G. on this line, and as recently announced, it expects to broaden this relationship in the future."

Among those on the board with Mr. Teagle are Edsel Ford, president, Ford Motor Co.; Charles E. Mitchell, chairman, National City Bank, New York, and Paul M. Warburg, the international banker. This is said to be the first time Henry or Edsel Ford have become interested in any company outside the Ford Motor Co. or its subsidiaries.

CLEVELAND, April 27.—F. R. Allnutt, who has been conducting an oil marketing business for the past 10 years in London, England, has organized the Clarendon Petroleum Co., Ltd., with headquarters at Liverpool House, Eldon St., London. The new company was established March 30.

Oil Trademarks For Copyright

The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"PHILLIPS '77' " No. 267,453. Phillips Petroleum Co., Bartlesville, Okla. For gasolines.

"NUFORZA" No. 274,048. Georgia-Carolina Oil Co., Macon, Ga. For lubricating oils and greases.

"STERNS" No. 275,243. Sterns, Limited, London, England. For lubricating oils and greases.

"ARCHER" No. 276,277. C. A. Skinner, Council Bluffs, Iowa. For lubricating oils and greases.

"TRAVELON" No. 278,241. Allen L. Miller, Chicago, Illinois. For gasoline.

"CEROWAX" No. 278,318. Vacuum Oil Co., New York City. For mineral wax.

"SUNNYSIDE" No. 278,759. Sunnyside Oil Co., Chicago, Ill. For oils and greases for lubricating purposes.

"QUAKERSFIELD" No. 278,980. Buck & Bowers Oil Co., Inc., Tacoma, Wash. For lubricating oils and greases.

"VICKOLINE" No. 279,004. W. B. McVicker Co., Brooklyn, N. Y. For lubricating oils and greases.

"PURFEX" No. 274,932. Purfex Mfg. Co., Philadelphia, Pa. For penetrating oil; spraying-gun oil, high-pressure lubricant, cup grease, gear grease and lubricating oils.

"GLYCERATED" written within a diamond-shaped figure. No. 276,663. Mona Motor Oil Company, Council Bluffs, Iowa. For lubricating oils.

"T P" with picture of a tepee, and wings on each side of the tepee. No. 277,858. Texas Pacific Coal and Oil Company, Fort Worth, Texas. For lubricating oils. (this mark is accompanied with descriptive wording which has been disclaimed)

"EXCELSOL" No. 278,714. Panhard Oil Corp., New York City. For lubricating oils and greases.

"PHILLIPS '77' " No. 265,686. Phillips Petroleum Co., Bartlesville, Okla. For gasoline.

"MOBILGREASE" No. 274,858. Vacuum Oil Co., New York City. For lubricating greases.

TRADE-MARK CONSISTING IN COLORING THE DRUMS FOR THE GOODS BLUE, WITH A WIDE YELLOW CIRCUMFERENTIAL BAND AT ITS CENTER AND TWO NARROW RED CIRCUMFERENTIAL BANDS

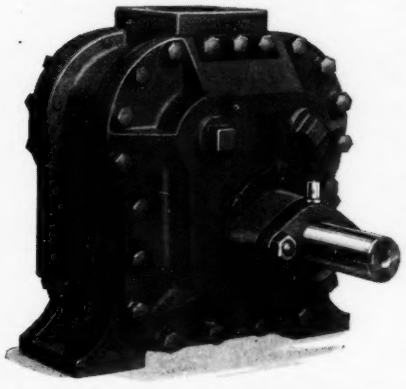
(*Continued on Page* 135)

Announcing the **NORTHERN ROTARY PUMPS**

HAWLEY TYPE

"MORE GALLONS PER HORSE POWER"

THIS pump embodies features of design, basically new, never before used in a Rotary Gear Pump, which make it without an equal in simplicity, durability and efficiency for handling Lubricating Oils and all clean liquids which possess lubricating qualities. Added to the improved design are the excellence of materials and workmanship for which the name "Northern" has stood for many years.



Write for illustrated folder describing the new features of the Hawley Type Northern Pump.

NORTHERN PUMP CO.

MINNEAPOLIS, MINN.

OFFICES IN ALL PRINCIPAL CITIES

OILGRAM STAFF

at every

Important Oil Center

The OILGRAM has its own staff of trained petroleum market reporters at each of the four major refining and marketing centers—Mid-Continent, Western Pennsylvania, Eastern, Chicago.

These trained men are in close contact with the markets EVERY DAY. That, and that only, is their job.

The OILGRAM is the ONLY petroleum market service which has such an organization for *gathering information at its source.*

Try this daily market service for 3 months. See how profitably it fits into your business; 3 months for $25, or $75 for a whole year, cash in advance.

Send your order with check to the nearest mailing point.

TULSA—904 World Bldg.

CHICAGO—35 East Wacker Drive.

NEW YORK—342 Madison Avenue.

CLEVELAND—753 Penton Bldg.

HAYES

When it comes to pumps—

HAYES HAS THE WORLD BEAT

Only Hayes has all these features.

Oil Derrick Type Frame

-:-

One large Central Nut for Equalizing Cylinder Tension

-:-

Extra-Visible Gallon Markings

-:-

Hose-end Control

-:-

A Life Time of Service

-:-

Positive Measure Pumps when required.

⚜ ⚜

HAYES EQUIPMENT MFG. CO.

Wichita, Kansas

COMPLETE FILLING STATION EQUIPMENT

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended April 27 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	30⅛	(sh) 922,075	N.P.	Amerada Corp	50cQ	Apr. 30, 29	14,000	34	35	32¾	33	— 1
85	51¼	64¾	44	(sh) 209,180	N.P.	American Republics Corp	....	.....	2,600	58	58	54⅝	54⅝	— 3¾
53⅜	37½	47¼	43	$56,000,000	$25	Associated Oil	50cQ	Mar. 31, 29	80	45¾	45¾	45	45	— 1
62½	50	68	53½	50,000,000	25	Atlantic Refining	‡25cQ	Mar. 15, 29	878,100	61	65½	60⅜	64½	+ 4
118¼	114½	117⅝	114	20,000,000	100	do pfd	$1.75Q	May 1, 29	120	114	114	†114	114	— 1
53	20	46⅞	38⅛	47,261,125	25	Barnsdall Corp. A	50cQ	Feb. 5, 29	71,800	44½	45½	43⅛	43½	— 1
51⅛	20	49	38⅛	300,525	25	do B	50cQ	Feb. 5, 29	.....	.....	.....	.....	.....	.....
24½	12¼	28½	20	(sh) 956,075	N.P.	Beacon Oil	....	.....	9,200	23⅛	23½	22⅝	23	0
36	25¼	30	26¾	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	10	27	27	27	27	— 3
94⅞	68	81¼	63	21,031,400	100	General Asphalt	....	.....	11,200	75½	76	73	74	— 2
141	110⅛	120¼	104½	6,628,200	100	do pfd	$1.25Q	Mar. 1, 29	100	112	112	112	112	— 7½
167	79	107	80⅛	25,000,000	100	Houston Oil	....	.....	23,400	101	102⅝	95½	98	— 4½
38⅜	21¾	38½	30	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Apr. 30, 29	45,800	38¼	*38½	35⅝	36⅜	— 1⅞
39⅜	9	52⅝	29	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	133,700	47⅞	51⅜	46	49¾	+ 2⅛
37¼	8½	48¾	28	4,550,110	10	do ctfs	....	.....	51,100	45½	48½	44½	47⅛	+ 1⅞
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Apr. 1, 29	.....	.....	.....	.....	.....	.....
39⅛	27⅜	33½	26¼	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	1,800	30¾	31½	29	29	— 2½
19¾	9⅜	18	12¾	(sh) 1,187,298	N.P.	Louisiana Oil Refining	....	.....	17,800	15	15	13⅞	13⅞	— 1¼
96	78	100	89	$4,000,000	$100	do pfd	$1⅝Q	Feb. 15, 29	.....	.....	.....	.....	.....	.....
25½	12½	18⅛	12	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	14,200	16⅞	18⅜	16⅞	17	0
49¾	33	47⅛	35⅞	(sh) 2,316,897	N.P.	Marland Oil Co	....	Mar. 31, 27	39,400	42	42	39½	40⅜	— 1⅜
360	250	295	226	$45,942,800	$100	Mexican Petroleum	‡$3Q	Apr. 20, 29	270	259⅞	*295	250	250	+53
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Apr. 20, 29	.....	.....	.....	.....	.....	.....
73	4⅝	69⅜	41½	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15. 24	196,300	49⅞	60	49¼	57½	+ 8⅛
44½	25⅛	39⅞	30½	(sh) 1,857,461	N.P.	Mid-Continent	....	Aug. 1, 27	39,600	36¾	36⅞	34⅝	35¼	— 1½
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Mar. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	3¾	23,849,720	10	Middle States	....	July 1, 23	6,600	4½	4½	4¼	4¼	0
5⅞	1½	3½	2¾	5,950,500	10	do ctfs	....	.....	3,600	3	3¼	2⅞	3¼	+ ⅜
2¼	1	1½	1	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	6,400	1¼	1¼	1	1⅛	0
55½	38¼	62⅝	41⅛	$50,000,000	$50	Pan American P. & T.	....	Oct. 20, 27	7,300	62¼	*62⅝	58	59⅞	— 2⅜
58⅞	37¾	65½	40½	121,101,400	50	do B	....	Oct. 20, 27	236,400	64¾	*65½	58½	61	— 3½
28⅜	15½	17½	14	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	700	14½	15¼	†14	14	— 1
21¾	11½	15¼	9½	(sh) 199,370	N.P.	Panhandle P. & R	....	.....	1,100	12⅝	12⅝	12	12¼	— ¾
106¼	70	76	47½	$2,935,200	$100	do pfd	....	July 2, 23	.....	.....	.....	.....	.....	.....
53⅞	35¼	47	37¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Apr. 1, 29	19,600	43⅞	43⅞	41½	42⅜	— 1⅝
5¼	½	3⅜	2¼	$29,622,925	$25	Pierce Oil	....	.....	6,500	2⅞	2⅞	2½	2⅞	+ 1/4
50	16¼	51½	30	15,000,000	100	do pfd	....	Feb. 1, 22	1,600	46	46¾	41⅝	43½	— 2½
6⅝	3½	5⅞	4⅝	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	28,400	5	5⅜	5	5¼	+ ⅛
64⅝	59½	65⅝	58	$60,636,450	$25	Prairie Oil & Gas	.....	Aug. 31, 27	9,200	61¾	61¾	59⅞	60¾	— ⅛
.....	.....	60	53⅝	101,250,000	25	Prairie Pipe Line	‡75cQ	Mar. 31, 29	45,900	56⅞	*60	56½	60	+ 3⅛
29⅞	16	25⅞	18¼	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	6,400	22	23	21⅜	21⅜	— ⅞
49⅝	41	45¾	38⅛	2,845,350	50	do pfd	....	May 1, 25	60	....	43	42	42	— 1⅜
31¼	19	28½	23½	75,959,250	25	Pure Oil Co	25cQ	Mar. 1, 29	49,400	28	28½	26	27	— ¾
119	108	115½	112	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 29	320	113	113	112¼	112¼	— ¾
56	23½	49⅜	40	47,127,725	25	Richfield Oil	50cQ	Feb. 15, 29	51,100	45⅛	47	44¼	45¼	+ 1¼
.....	.....	42½	33¾	(sh) 1,200,000	N.P.	Rio Grande Oil Co	‡$1S.A.	Jan. 25, 29	29,100	38⅜	38⅜	36½	36½	— 1⅞
64	44⅜	55¾	31¾	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.336	Feb. 8, 29	5,100	52⅜	52⅜	51⅞	52	— ⅞
57½	39⅜	55⅜	43	(sh) 65,203,000	£2	Shell Transport & T	96.4c	Feb. 8, 29	.....	.....	.....	.....	.....	.....
39⅜	23¼	31⅜	26	12,254,979	N.P.	Shell Union Oil	35cQ	Mar. 31, 29	147,600	30¾	30⅞	29	29⅜	— 1⅜
27¼	18¼	34¼	18¼	$8,357,280	$10	Simms Petroleum	40cQ	Mar. 15, 29	111,230	25⅞	*34¼	25⅝	30½	+ 4⅛
46¾	17⅜	45	36	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Apr. 15, 29	109,400	40⅛	40¼	38	38½	— 1¼
110	102½	111	109	$16,025,200	$100	do pfd	$2Q	Feb. 15, 29	700	109½	110¾	109½	110¾	+ 1¼
42⅝	25	46¼	32⅞	27,396,590	25	Skelly Oil Co	50cQ	Mar. 15, 29	91,100	43¾	*46¼	43	44½	— ½
80	53	80⅞	64	(sh) 13,016,435	N.P.	S. O. California	62½cQ	Mar. 15, 29	88,100	79⅜	79⅜	76½	77⅜	— 1⅝
59¾	37¾	61½	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Mar. 15, 29	109,100	60	60⅛	57½	58½	— 1½
45½	28¾	45¾	38⅝	434,094,575	25	S. O. New York	40cQ	Mar. 15, 29	87,900	43⅞	44⅜	42½	43¼	— ⅜
77	31½	68½	57	(sh) 1,297,847	N.P.	Sun Oil	25cQ	Mar. 15, 29	900	62¼	63½	60¼	60¾	— 2⅜
110	100	105½	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 29	260	103½	104⅜	103½	104⅛	+ ⅝
14¼	2½	12	7	(sh) 1,304,698	N.P.	Superior Oil Corp	....	Dec. 20, 20	39,800	9¼	9½	8½	8⅞	— ⅝
74⅜	50	68⅛	57¼	$211,082,925	$25	The Texas Corp	75cQ	Apr. 1, 29	51,100	68⅛	68⅜	64⅜	65	— 2¾
26⅜	12⅛	23⅞	16¼	8,380,340	10	Texas Pacific Coal & Oil	2½%o	Mar. 20, 29	11,100	20¾	21	19¾	20	— 1
41½	19⅝	38½	27⅛	(sh) 2,179,275	N.P.	Tide Water Oil Co	20cQ	Mar. 31, 29	2,100	34⅝	34⅝	33¼	33¾	— 1¾
100⅛	86¾	97½	90⅛	$20,321,000	$100	do 5½% pfd	$1.25Q	Feb. 15, 29	700	94	94	93½	94	0
25	14⅜	22	17½	(sh) 4,877,976	N.P.	Tide Water Associated	.....	Aug. 1, 27	17,400	20¾	20¾	19½	19⅞	— ⅞
91⅜	81⅞	90	86	$72,989,200	$100	do pfd	$1.50Q	Apr. 1, 29	500	88¼	88¼	87⅞	87⅞	— 1⅛
14½	6¾	13	9	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	39,200	11	11¼	10¾	11	0
58	42¾	54⅛	46	$40,858,375	$25	Union Oil of California	50cQ	Feb. 10, 29	11,900	52⅞	52⅞	50½	51	— 1½
128⅛	110	150¾	121⅞	31,101,200	100	Union Tank Car Co	$1.25Q	Mar. 1, 29	2,100	142	147	142	145¾	+ 4¾
44⅞	26	42⅞	32⅝	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Apr. 2, 29	32,100	34½	36½	33½	33⅞	— ½
38	20⅛	37⅞	30¼	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Apr. 20, 29	6,100	36⅜	36¾	35½	36	— ½
22⅛	17¼	29¾	19½	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	171,600	23⅞	29	23½	27¾	+ 4¾

*New High †New Low XEx-dividends ‡Also extras s-Stock Total Sales 3,197,350

Pittsburgh Stock Exchange

Transactions Week Ended April 26, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	4,130	5⅛	5	5	— ⅛
do pfd	4,163	8⅛	7⅞	8	0
Columbia Gas pfd.	50	104½	104½	104½	+1
Devonian Oil	925	7¼	6¾	7	+ ¾
Dixie Gas & Util.	1,420	15½	14	14	—1
do pfd	10	75	75	75	+5
Lone Star Gas	2,754	70	69½	69⅝	+ ⅛
Pet. Explo	100	32	32	32	0
Phoenix Oil pfd.	2,000	.45	.45	.45	+.05
Plymouth	65	25	25	25	0
Salt Creek Cons.	150	3¾	3¾	3¾	+ ¼

Pittsburgh Curb Market

Transactions Week Ended April 26, 1929

	Sales	High	Low	Last	Change
Ark. Gas Rights	4,430	.20	.10	.10	—.05
Leonard Oil & Dev.	800	5⅛	5⅛	5⅛	+ ⅛

Refunding Preferred Called by Indian

CLEVELAND, April 29.—The preferred stock which the Indian Refining Co. has called for retirement July 1, is the refunding preferred stock of which only 340 shares are outstanding.

At the end of 1928 the company also had outstanding $15,300 of old preferred stock which is convertible into common stock on a basis of five shares of common stock for each share of preferred.

To Manage Jobbing Company

CHICAGO, April 27.—Mr. Charles H. Chapin, district manager of Marland Refining Co.'s Minneapolis, office, announced his resignation effective May 1. He has accepted the managership of the Wilson Oil Co., a jobbing company located at Grand and Division Sts., Chicago. Mr. Chapin is well known among the local oil trade, having been Marland's assistant district manager at Chicago before being transferred to Minneapolis. Mr. Chapin also owns and operates the Kellogg Oil Co., Constantine, Michigan.

Cleveland Stock Market

April 26	Par Value	Bid	Asked
Canfield Oil Co	$100	125	140
do pfd	100	103	...
Fred G. Clark	10	9	10
National Refining	25	33	37
do pfd	100	...	137½
Paragon Refining	25	23¾	24¼
do pfd	N.P.	41½	44
do ctfs. of deposit	...	...	23½

xEx dividend

Oil Company Earnings

Year	1928	1927
Cities Service	*$42,320,688	† 41,258,680
Pierce Petroleum	1,052,894	10,657
Stand. of N. Y.	39,645,228	11,414,887
First Quarter	**1929**	**1928**
Barnsdall Corp.	$1,888,372	$389,131
Pierce Petroleum	31,122	†34,265
Prairie Pipe Line	5,400,000	...
Texas Pac. C. & O.	*428,142	*394,080
Transc. Oil	‡527,551	††70,646

*Before reserves. †Loss ‡Before federal income taxes.

Skilled Supervision
Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices
PITTSBURGH, PA.

District Sales Offices
New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

STEEL
DRUM ACCESSORIES
CORPORATION

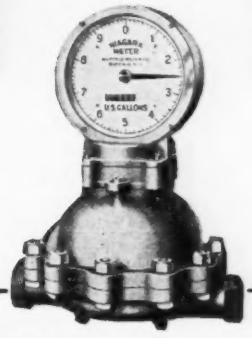
BUFFALO, NEW YORK

"The House of Drum Faucets"

ACCURACY

Regardless of how much or how little gasoline or oil passes through a Niagara meter, it accurately registers and records, preventing loss, theft or favoritism.

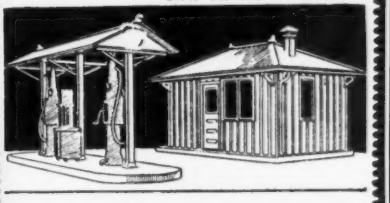
And a Niagara repays its cost by enabling you to sell and profit on the gasoline and oil that would be unaccounted for without a meter! Send today for our newest catalogue.



BUFFALO METER COMPANY
2887 Main St., Buffalo, N. Y.

PRUDEN SYSTEM
SAINT PAUL

This, one of many Pruden styles, is the lowest priced, thoroughly practical station on the market.



Made ENTIRELY of STEEL

All Pruden units are fabricated to be quickly put up without the aid of any wood whatsoever giving you the advantage of strong, ABSOLUTELY fireproof construction.

Pruden System buildings are handsome, economical and portable. They can be perfectly insulated against heat and cold.

Agents wanted

Some one of the wide variety of styles, sizes and prices of Pruden System buildings will exactly meet your requirements.

Metal Shelter Co
Wabasha & Water Sts.
SAINT PAUL, MINN.

Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Sales	Week Ended April 27 First	High	Low	Last	Change
22⅜	14⅞	18¾	15	£4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	2,200	16⅛	16⅛	†15	15⅝	— ⅜
21¼	15	18	14½	.....	...	do certificates	.....	.....	200	14¾	15½	14¾	15¼	— 1⅛
20½	14⅜	17	14¼	.....	£ 1	do cts. non-voting	.....	.....	800	15⅝	†14¼	14⅞	14⅞	— ⅛
5	1¼	2⅜	2	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	1,200	2	2¼	2	2	— ⅜
9¾	3¼	4⅛	3¾	$10,000,000	$50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
56	44½	46½	38	$1,000,000	25	Borne-Scrymser	‡$1S.A.	Apr. 15, 29	150	40	40	†38	38	— 1
76	58	74¼	67	10,000,000	50	Buckeye Pipe Line	‡$1Q	Mar. 15, 29	1,200	71⅝	71⅝	69	69	— 2¾
161	117¼	170	140⅛	3,000,000	25	Chesebrough Mfg	‡$1Q	Mar. 31, 29	300	168	*170	168	168	+ 3
23	16	29	17⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	28,400	24¼	24¼	22⅝	22¾	— 1½
17½	9½	11⅜	8⅜	.....	N.P.	Creole Petroleum	.....	.....	19,100	9	9¼	8⅜	9	0
82	67	75¾	62	1,500,000	50	Cumberland Pipe Line	‡$1Q	Mar. 15, 29	150	64¾	65	64¾	65	+ 3
88	64⅛	70½	60	5,000,000	100	Eureka Pipe Line	$1Q	June 1, 29	.....	.....	.....	.....	.....	.....
13	4¼	6⅜	5½	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	6½	6½	6½	6½	+ 1
86	26	90	75	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	85	75	2,000,000	100	do old pfd	.....	June 30, 26	110	76	76	†75	75	— 2
114¾	59¼	118⅞	89⅝	73,685,700	25	Humble Oil & Refining	‡30cQ	Apr. 1, 29	20,200	118	*118⅞	113	114½	— 1¾
290½	176½	325	285	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 15, 28	450	315½	*325	315	325	+ 5¼
104	56¾	119⅝	88	(sh) 6,591,458	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 29	1,600	116⅞	117	114	114½	— 2½
91⅞	74⅝	97	81¼	$5,000,000	$50	Indiana Pipe Line	‡$1Q	Feb. 15, 29	600	92	92½	91	91	— 1
55	35	65½	46⅛	(sh) 7,123,544	N.P.	International Petroleum	25c	Mar. 15, 29	7,600	55¾	56¼	53⅛	53¾	— 2⅜
32⅜	19⅜	25⅞	21⅝	$6,363,350	12.50	National Transit Co	‡25cQ	Mar. 15, 29	2,800	24	25	23½	24¾	+ ⅜
75	38½	85	72	5,000,000	100	New York Transit	.....	July 15, 26	250	78¼	78½	77	78½	— 1¾
69	56½	63	54	2,000,000	50	Northern Pipe Line	$2S.A.	Jan. 2, 29	150	52¾	58½	52¾	58½	0
83½	58½	74⅜	64⅛	60,000,000	25	Ohio Oil Co	50cQ	Mar. 15, 29	1,600	72	72	68⅞	69¼	— 3¼
84	28	44½	30	10,000,000	25	Penn Mex. Fuel	75c	Dec. 16, 28	700	31⅝	31⅝	31	31	0
220	167	50	40	4,000,000	25	Solar Refining	$5S.A.	Dec. 20, 28	100	44	44	44	44	+ 3⅜
19	12	22½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	1,300	19⅛	19½	19	19½	— ⅜
71⅞	36¾	60¼	40⅜	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 29	16,100	53⅞	*60¼	53⅝	58⅛	0
102	70	70	62¾	1,750,000	50	South West Pa. Pipe Lines	$1	Apr. 1, 29	50	62¾	65	†62¾	65	+ 2¼
95⅞	70⅞	103¼	56	230,788,513	25	S. O. Indiana	‡62½cQ	Mar. 15, 29	30,600	59⅞	60	59½	59½	— ⅜
27¾	15	21⅞	18	8,000,000	25	S. O. Kansas	.....	June 16, 24	900	19⅜	19½	19⅜	19½	+ ⅛
49	44	45¼	38	25,654,516	10	S. O. Kentucky new	40cQ	Mar. 31, 29	6,400	40¼	40¾	39½	39½	— ½
54⅝	39⅞	49½	45½	4,649,225	25	S. O. Nebraska	‡62cQ	Mar. 20, 29	.....	.....	.....	.....	.....	.....
134	71	127½	110¼	14,000,000	25	S. O. Ohio	62½cQ	Apr. 1, 29	2,400	122	125¾	122	124¾	+ 3¾
125	116	124½	116¼	7,000,000	100	do pfd	$1.75Q	Mar. 1, 29	160	119½	119½	116¼	116¼	— 2¾
23½	16	18	15	861,466	25	Swan Finch Co	30c	Jan. 15, 29	100	15	15	15	15	— ½
111	72	133¾	105½	126,154,000	25	Vacuum Oil	$1Q	Mar. 20, 29	7,600	127	129¼	125¼	126⅜	+ ⅜

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Sales	Week Ended April 27 First	High	Low	Last	Change
1½	.53	.72	.45	$ 5	Amer. Cons. Oilfields	1,400	.54	.59	.50	.55	— .04
9½	3⅛	8⅝	4⅛	N.P.	Amer. Maracaibo	7,900	5	4	4¾	4⅞	— ⅛
4½	2¼	4½	1⅞	$10	Argo Oil	6,400	3¾	*4½	3¾	4½	+ ¾
3¾	3⅜	5¾	3¾	10	Arkansas Nat. Gas	22,500	5⅝	5⅝	5⅛	5⅜	— ¼
55	32¾	62	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¼	4⅜	2⅝	25c	Carib Syndicate	2,400	2⅞	3⅛	2⅞	3⅛	+ ¼
90⅛	54	121⅛	88⅜	$25	Cities Service	129,700	114	114¼	111½	113⅜	— 1¼
.....	.....	.....	.....	.....	do new	38,900	28⅞	29	28⅛	28⅝	— ½
103½	94½	98½	88¾	100	do pfd	1,200	97	97¾	96⅞	97¾	+ ⅜
9⅝	8⅞	9¼	8⅞	10	do pref. B	100	106¼	106¼	106¼	106¼	— ¼
97	88½	95	92½	100	do pref. BB	200	94⅜	94⅜	94¼	94¼	— ¾
35⅛	27⅜	.....	.....	10	do Bankers	200	9	9	9	9	— ¼
2⅛	1	1½	1½	1	Colombia Syndicate	8,800	1⅛	1¼	1⅛	1⅛	0
17¾	9¾	15	8¼	....	Colon Oil	1,800	9⅞	10	9¾	9¾	— ⅝
8⅛	6¼	11¼	6½	10	Consolidated Royal	100	8	8⅛	7¾	7¾	— ⅛
3¼	.76	2¼	1⅛	N.P.	Crown Central	3,800	2⅜	2⅜	1⅞	1⅞	— ⅜
15	6¾	11¾	8	N.P.	Crystal Oil	100	8¼	8¼	8¼	8¼	— 1½
50	48	51¾	51¼	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8⅛	26	17	N.P.	Darby Petroleum	400	17⅛	17⅛	17	17	— 1
13½	7⅛	.....	.....	.....	do trust ctfs	.....	.....	.....	.....	.....	.....
2⅞	1	5	2	N.P.	Derby Oil & Refining	1,800	3⅞	4	3⅞	4	+ ⅛
21⅛	7½	....	....	N.P.	do pfd	100	27	27	27	27	+ 1
2	1	....	....	N.P.	Gibson Oil	.....	....	....	....	....	.....
.53	.15	....	....	N.P.	Gilliland ctfs	.....	....	....	....	....	.....
165	101¼	167	142½	$25	Gulf Oil Corp	2,400	160¼	160¼	157¼	159½	— ½
7½	5⅜	7½	4½	5	Homaokla Oil	27,100	4⅞	5	4½	5	+ ¼
3⅜	1	2½	1¼	10	Intercontinental Pet	43,100	2	2⅛	1¾	2⅜	+ ⅜
3	⅛	3⅜	1⅜	N.P.	Kirby Petroleum	800	2⅛	2¼	2	2	0
9⅜	5⅛	6¼	5	N.P.	Leonard Oil & Dev	1,700	5⅛	5⅛	5	5	— ⅛
43⅜	20	36⅞	24¾	N.P.	Lion Oil & Refg	5,700	35	*36⅞	34	35¾	0
69½	48⅛	74⅛	67	$25	Lone Star Gas	100	69⅞	69⅞	69⅞	69⅞	+ ⅜
1¼	.50	1¼	.60	1	Magdalena Syndicate	1,500	63	65	60	61	+ 1
48½	32	38½	25	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
40½	40½	....	....	$10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
8	2¾	6¾	3⅜	N.P.	Mexico-Ohio Oil	1,800	5	5	4½	5	+ ½
.74	.20	....	....	$10	Mexico Oil	.....	....	....	....	....	.....
1¾	.76	1½	1⅛	1	Mountain & Gulf	2,900	1⅛	1¼	1⅛	1⅛	0
28⅛	19½	22¾	18½	10	Mountain Producers	1,600	19¼	19¼	18⅝	19	— ½
5⅝	4¼	5	3⅞	5	New Bradford	2,400	4¼	4½	4⅛	4½	0
5½	3	3½	3	10	New England Fuel	300	3	3	3	3	0
11⅞	7½	9¾	7¼	1	New Mex. & Ariz	600	7½	7½	7¼	7¼	— ¼
15½	11½	....	....	25	New York Petrol	1,800	20¼	20½	19¾	20½	+ ¾
40	39½	....	....	.....	North Amer. Oil Cons.	.....	.....	.....	.....	.....	.....
13¼	8½	11½	8¾	N.P.	North Cent. Texas	1,300	11⅜	11⅜	11	11	— ⅝
....	....	19¼	14⅝	N.P.	Oil Stock, Ltd. A	1,600	15⅜	15½	14½	15	— ⅝
....	....	17⅜	15	N.P.	do B	.....	.....	.....	.....	.....	.....
26¼	20	23¼	18½	N.P.	Pacific Western Oil	2,100	20¼	20¼	19	18⅜	— 1⅞
6	2¼	3½	2	N.P.	Pandem	2,900	2⅜	2⅜	2¼	2⅜	0
15⅜	8½	10¾	7⅛	N.P.	Pantapec	2,800	7¾	8	7½	8	0
20	10⅜	....	....	$25	Paragon Refg. B. ctfs	.....	.....	.....	.....	.....	.....
.09	.04	....	....	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
7¾	4¾	7⅜	4⅜	$10	Pennok Oil	100	7½	7½	7½	7½	+ ½
....	....	34½	27¼	N.P.	Petroleum Corp	15,900	30¼	30⅝	†27¼	27¼	+ ¼
5⅜	3¼	....	....	$5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
31⅜	26½	30	23	N.P.	Plymouth Oil	900	25	25¼	24½	25	0
18	8	16	11⅜	25	Red Bank Oil	400	13½	14	13½	14	+ ⅞
13	4⅜	8½	5	N.P.	Reiter-Foster	1,400	5¼	5¼	5	5⅛	0
31½	23¼	25¾	24⅛	$25	Richfield pfd	200	25	25	24½	25	— ¼
....	....	26½	23½	....	Root Refining pfd	1,700	27	28	27	28	+ 1½
12	4⅝	11	7	N.P.	Ryan Consolidated	400	7⅜	7⅜	†7	7¼	— ⅛
7¼	5½	5⅞	3⅜	$10	Salt Creek Cons	.....	.....	.....	.....	.....	.....
35	23¼	25¾	21	10	Salt Creek Prod	1,100	22¼	22¼	†21	21¼	— 1¼
3½	1	2¼	1⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
40	27	33⅛	32	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
....	....	23	16⅝	N.P.	Texon Oil & Land	6,700	20	21	19⅞	20½	0
22⅛	13	16⅞	11⅝	$10	Tidal Osage	400	15⅝	15⅝	15	15⅝	— ⅜
21¼	13⅛	16½	10⅛	10	do non-voting	1,500	15⅛	15⅝	J23¾	12¾	— 2⅜
93¾	75	89	80	100	Transcontinental pfd	100	84	84	84	84	— 1
74¼	18	69	66	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
9½	4¾	6½	4¼	5	Venezuelan Petrol	4,100	4¾	5	4¾	4¾	— ⅛
8¼	4⅞	9⅛	5¾	1	Woodley Petroleum	1,800	6⅛	6⅛	5⅞	6	+ ¼
⅝	⅛	5⅜	2¾	25	Y Oil & Gas	800	2¾	2⅞	2¾	2⅞	+ ⅛

*New High †New Low

New York Curb Bonds

Week Ending April 26

	High	Low	Last	Change
Beacon Oil 6s '36	112½	111½	111½	—1
Cities Serv. 5s '66	88	87⅛	87½	— ⅞
Cities Serv. G. 5½s '42	91	90¼	90½	+ ¼
Cities Serv. G. P. 6s '43	95½	94¾	94¾	— ¼
Cont. Oil 5⅛s '37	96	95½	95½	— ½
Empire O & R 5½s '42	90½	89⅜	90½	+1
Gulf Oil 5s '37	101¼	100⅜	100⅜	— ¾
Gulf Oil 5s '47	101	100⅜	100¾	— ½
Indep. Oil 6s '39	119½	113	114	—4½
Richfield Oil 5½s '31	100½	100	100½	+ ¾
Valvoline Oil 7s '37	103½	103½	103½	0

Oil Dividends

	Amount	Payable	Stock of Record
General Asphalt pfd. q	$1.25	June 1	May 15
Illinois Pipe Line s. a	$10	June 15	May 13
National Refining q	37½c	May 15	May 1
S. O. Ohio pfd. q	$1.75	June 1	May 10

New York Bonds

Week Ending April 26

	High	Low	Last	Change
Assoc. Oil gold 6s	102	101½	102	+ ½
Atlantic Refg. deb. 5s	101	100	100⅞	+ ⅞
Cal. Pet. 5s	101½	99¾	99¾	— ¼
Cal. Pet. 5½s	102	100¾	100¾	—1⅛
General Asphalt 6s	104½	104½	104½	0
General Pet. 5s	101	100½	100¾	+ ¼
Humble Oil & Refg. 5s	100½	100¼	100⅜	— ⅛
Humble Oil & Refg. 5½s	101½	101	101½	+ ¼
Pan Amer. P & T 7s	105	104½	104½	0
Pan Amer P & T 6s	109⅝	107	107⅛	—2½
Pan Amer P & T 6s	97¾	97	97	— ¼
Phillips Pet. 5¼s	92¼	91	91¾	— ¼
Pure Oil 5½s	98½	98	98½	+ ½
Shell Union Oil 5s	98	97¼	97¼	— ¼
Simms Pet. 6s	99	99	99	0
Sinclair Con. Oil 7s	102⅞	102	100⅞	+1
Sin. Con. Oil 6½s	101½	100¼	101½	+1⅝
Sin. Con. Oil 6s D	99¼	99	99⅛	0
Sinc. Con. Oil Crude 5½s	97¼	96¾	96⅞	— ⅜
Sinclair Pipeline	94¼	93¾	93¾	— ½
Skelly Oil 5½s	95	94	94½	+ ½
S. O. N. Y. 4½s	96⅝	96¼	96½	+ ¼
S. O. N. J. 5s	102½	102	102¼	+ ⅛
Union Oil of Calif. 6s A	107	106¾	107	— ¼
Union Oil of Calif. 5s C	98¼	97⅜	98¼	0
White Eagle Oil 5½s	102	101½	101½	— ½

Trademarks

(*Continued from Page* 130)

ADJACENT TO ITS ENDS. No. 266,707. The Bassick Mfg. Co., Chicago, Ill. For lubricating oils and greases.

"ORONITE" No. 272,061. Standard Oil Company of California, San Francisco, Calif. For lubricating oils, and priming spirits consisting of gasoline.

"'BROOKS'" No. 274,630. The Brooks Oil Co., Cleveland, Ohio. For gasolines, benzines, benzols, motor fuels, fuel oils, lubricating oils, lubricating greases, etc.

"NOXLESS" No. 253,106. Panhandle Refining Co., Wichita, Texas. For gasoline.

"VIOLET RAY" No. 277,876. General Petroleum Corp. of California, San Francisco, Calif. For gasoline.

"ISOTHERMOS" No. 278,853. Societe Generale Isothermos, Paris, France. For illuminating oils, motor-fuel oils, lubricating oils, gasoline, and crude petroleum.

"SYNTHESIN" No. 279,153. I. G. Farbenindustrie Aktiengesellschaft, Frankfort on the Main, Germany. For synthetic benzine.

"LEUNALIN" No. 279,152. I. G. Farbenindustrie Aktiengesellschaft, Frankfort on the Main, Germany. For synthetic benzine.

"PUROCO" No. 278,606. The Pure Oil Co., Chicago, Ill. For hydrocarbon motor fuel oils, lubricating oils and greases.

"PUROCO" No. 278,605. The Pure Oil Company, Chicago, Ill. For hydrocarbon motor fuel oils, lubricating oils and greases.

"PENN-CLARE" No. 277,905. Lynch-Clarisey Co., Chicago, Ill. For lubricating oils.

"SUPER-RATIO" with the monogram "D O CO" written on a star. No. 266,024. The Derby Oil Co., Wichita, Kans. For motor fuel oils and gasoline.

"CORENCO" No. 268,778. Consolidated Rendering Co., Boston, Mass. For oleo oils for lubricating purposes and stearine for lubricating purposes.

"BURNHAM TESTED PALES" No. 269,278. Calumet Refining Co., Chicago, Ill. For lubricating oils.

"SEAL-TITE" No. 272,772. Recommend Oil Co., New York City. For lubricating oils and greases.

Germany Studies U. S. Gasoline Taxes

NEW YORK, April 25.—R. C. Holmes, president of The Texas Co., and W. R. Boyd, Jr., executive vice-president of the American Petroleum Institute, were explaining the workings of the state gasoline tax today to a special German commission which has come to this country to study the possibilities of putting into effect in Germany taxes on gasoline and other petroleum products.

They were to discuss with the German commission the attitude of the public towards the gasoline tax, its manner of collection, how the oil industry regarded it and so on.

The German commission arrived in New York April 22.

CHICAGO, April 27.—On April 27, the James B. Berry's Sons Co., Chicago marketers, moved into new and larger quarters at Room 1602, 6 No. Michigan avenue. They have been located in the Straus building, 310 So. Michigan avenue for the past 4 years.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

ERECTING MACHINIST thoroughly familiar with Diesel, crude oil, gas or gasoline engines. Installation, operation and upkeep, would consider chief engineer, shop foreman, or traveling position. Available about May first. Address Box 325.

FILLING STATION SUPERVISOR with fifteen years experience constructing and managing filling stations, tank wagon sales and salesmen, desires connection with opportunity to produce results. Thirty-eight years of age, married, and can give best of reference. Address Box 321.

EQUIPMENT SALES ENGINEER. Know equipment manufacture; specializing with money-saving equipment for large oil companies. Wide knowledge of sales conditions and requirements. Particularly interested in organization work requiring new ideas, or manufacture that can work out equipment that is needed under present marketing conditions. Now connected. Address Box 322.

Situations Open

OPPORTUNITY

with a large nationally known company for a man to promote sale of a basic material used in oil refining. Must have had several years technical or practical refinery experience and be willing to travel. An excellent opportunity for a high class man. Write stating age, experience and salary expected.

Address "Refining," care N. P. N., Room 916—342 Madison Ave., New York City

CHIEF ENGINEER WANTED

Permanent position for college graduate in mechanical engineering for progressive independent oil company.

Must be experienced in Refinery Construction and Maintenance Engineering and have designing ability. Young or middle aged man preferred.

Give complete history and experience in first letter and state salary expected.

Address Box 324

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

Wanted to Buy

250,000 lbs. 124-126 A S T M unfiltered yellow or white crude scale wax wanted in tank cars monthly.

Write Box 314, care this publication.

For Sale

BULK PLANT FOR SALE. 160,000 gallons storage, service station and curb pumps. Sold in 1928, 110 cars gas and kerosene. Located in Wisconsin town of 5,000. Address Box 326.

OIL RECLAIMING PLANT FOR SALE within Baltimore city limits on railroad siding. One acre ground, office building, laboratory, storage tanks, stills, steam plants, sheds, loading platform. Wonderful opportunity for oil company desiring to establish Eastern branch.

M. R. Segall & Co.,
901 E. Fort Ave., Baltimore, Md.

Somebody Can Use Your Outgrown Equipment

Tell them all about it through the Oil Industry Exchange. The cost is small. See rates at bottom of page.

Patents

ROYAL E. BURNHAM
Attorney-At-Law
Patent and Trade-Mark Practice Exclusively
Continental Trust Building
Washington, D. C.

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00

"Position Wanted"—5 cents a word. Minimum charge $1.00.

Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

ADVERTISERS INDEX

National Petroleum News

Adamson Mfg. Co. 104
Agefci 72
Alliance Tank Co.
Allis Co., Louis
Aluminum Company of America
American Can Co.
American Commercial Alcohol Corp.
American Flange & Mfg. Co.
American Fomon Co. 83
American La France & Foamite Corp. 74
American Oil Pump & Tank Co.
American Oil Works Co.
American Radiator Co.
American Schaeffer & Budenberg Corp.
American Telephone and Telegraph Co.
Artcraft Sign Co.
Aurora Equipment Co.
Autocar Co.
Au-to Compressor Co.
Automobile Rotary Lift Co. 121

Babcock & Wilcox Tube Co. Insert
Badger & Sons Company, E. B.
Barnsdall Refineries, Inc. 96–97
Battenfeld Grease & Oil Co.
Bennett Export Corp. 22–23–101
Bennett Pumps Corp. 22–23
Berry's Jas B. Sons, Inc. 126
Bessemer Gas Engine Co.
Bethlehem Steel Co. 121
Biggs Boiler Works Co.
Birmingham Tank Co.
Blackmer Pump Co.
Boe Mfg. Co.
Bowser & Co., Inc., S. F.
Braden Engineering Inc.
Braun & Co., C. F. 63
Brown Sheet Iron & Steel Co. 126
Buckeye Iron & Brass Works
Budd Wheel Co. 7
Buffalo Meter Co. 133
Burford Oil Co. 8–9
Butler Mfg. Co. 6
Byron Jackson, Inc.

Campbell, J. A.
Canfield Oil Co., Cleveland
Carbondale Machine Co.
Central Alloy Steel Corp. Insert
Champion Pneumatic Mach. Co. 128
Champlin Refining Co.
Chestnut & Smith Corp.
Chevrolet Motor Co. 21
Cincinnati Advertising Products Co.
Classified Advertising 135
Clear Vision Pump Co. 19
Cleveland Brass Mfg. Co.
Columbian Steel Tank Co.
Combustion Engineering Corp. 1
Consolidated Ashcroft Hancock Co., Inc. 80
Continental Can Co.
Continental Refining Co.
Continental Rubber Works
Continental Supply Co.
Cooke Seal Ring 66
Cooper-Bessemer Corp.
Correct Measure Co.
Crocker-Wheeler Electric Mfg Co.
Crouse-Hinds Co.
Crown Central Petroleum Corp.
Curtis Pneumatic Machinery Co.
Cushing Refg. & Gasoline Co.

Daugherty & Son Refg. Co., W. H.
Davis & Gant Mfg. Co., The
Davis Welding & Mfg. Co.
Dayton Air Compressors
Dayton Pump & Mfg. Co.
Deepwater Oil Refineries 20
Dempster Mill Mfg. Co.
Des Moines Foundry & Machine Co.
Detroit Graphite Co. 5
Dill Manufacturing Co.
Dodge Bros. 16
Dodge Steel Co. 68
Draper Mfg. Co. Third Cover
du Pont de Nemours, E. I. & Co., Inc.
Dyestuffs & Chemicals, Inc. 119

Edeleanu Process 72
Edwards Mfg. Co.
El Dorado Refg. Co.
Electric Service Supplies Co.
Ellis & Sons, Inc., George D.
Emerson-Scheuring Tank Co.
Empire Oil Works, Inc. 18
Empire Oil & Refining Co.
Erie Meter Systems, Inc.
Ethyl Gasoline Corp.
Eureka Machine Co.

Farrell Mfg. Co.
Federal Motor Truck Co.
Federal Products Co.
Fisk Tire Co., The
Fiske Bros. Refg. Co.
Flexlume Corp.
Foster-Wheeler Corp.
Foxboro Co., Inc.
Franklin Creek Refg. Co.
Freedom Oil Works 85
Fruehauf Trailer Co. 87

General Motors Truck Co.
Gilbert & Barker Mfg. Co. 11
Globe Machinery & Supply Co. 13
Globe Mfg. Co.
Globe Oil & Refg. Co.
Goodrich Rubber Co., B. F.
Goodyear Tire & Rubber Co., Inc.
Gott Mfg. Co., H. P. 81
Granberg Meter Corp. 93
Graver Corp.
Gray Processes Corp. 73
Greenspon's Sons Iron & Steel Co., Jos.
Griscom-Russell Co.
Gulf Ref. Co. 133

Halliburton Oil Well Cementing Co.
Hayes Equipment Mfg. Co. 131
Haynes Stellite Co.
Heat Transfer Products, Inc.
Heine Boiler Co. 1
Highland Body Mfg. Co.
Holmes, Ernest
Hope Engineering & Supply Co. 44
Hughes Tool Co. 57
Humble Oil & Refg. Co.
Huntley & Huntley

Illinois Glass Co.
Imperial Refg. Co. 12
Independent Oil & Gas Co. 14
Industrial Alcohol Institute Inc.
Industrial Chemical Mfg. Co.
Industrial Oil Corp.
International Combustion Eng. Corp. 1
International Derrick & Equipment Co.
International Harvester Co.

Jackson, Co., Byron
Jenkins Bros. 79
Jiffe Co. 119

Kanotex Ref. Co.
Kellogg Co., M. W. 125
King-Seeley Corp.

Ladd Water Tube Boiler Co. 1
Leader Iron Works
Liquidometer Corp.
Louisiana Oil Refg. Co.
Luce Trunk Co. 110
Ludlum Steel Co. Insert

Marland Refg. Co.
Mars Company
McDonald Mfg. Co., A. Y.
McKee & Co., Arthur G.
Melrath Supply & Gasket Co. 61
Merco Nordstrom Valve Co. 58
Merit Equipment Corp.
Metal Hose & Tubing Co. 24
Metal Shelter Co. 133
Metric Metal Works 61
Metropolitan Body Co.
Meyercord Co. Fourth Cover
Mid-Continent Petroleum Corp. 99
Milestone Meter Systems, Inc.
Miller Sons Co., A. D.
Morrison Bros.

National Cantube Co.
National Petroleum News 10–67
National Recording Pump Co.
National Refining Co.
National Safe Co.
National Service Station Equipment Co.
National Steel Barrel Co. 104
National Transit Pump & Machine Co. 73
National Tube Co. 46
Naturaline Company of America
New York Lubricating Oil Co.
North American Car Corp.
Northern Pump Co. 131

Oakite Products, Inc. 126
Ohio Steel Foundry Co.
Ohmer Fare Register Co.
Oil Conservation Engineering Co. 77
Oildraulic Lift Co.
Oil Products Appliance Co.
Oil Well Supply Co.
Oliver United Filters Inc. 73
Ottawa Mfg. Co.
Oxweld Acetylene Co. 51

Pennsylvania Pump Co., Inc. 95
Pennsylvania Refg. Co.
Petroleum Iron Works Co.
Petroleum Oil Corp.
Pforzheimer & Co., Carl H.
Phillips Petroleum Co. 90
Pittsburgh-Des Moines Steel Co. 107
Pittsburgh Equitable Meter Co.
Platt Co., W. C. 131
Pressed Steel Tank Co. 4
Producers & Refiners Corp.
Pure Oil Co.
Pyrene Mfg. Co. 125

Quincy Compressor Co. 17

Rand McNally & Co.
Rankin-Benedict Co.
Reading Iron Co.
Reid Gas Engine Co., Joseph 81
Republic Steel Package Co. 22–23–101
Roper Corp., Geo. D.
Rossville Commercial Alcohol Corp.

Safety Lift Co.
Sall Bros. Co.
Seaboard Chemical Co.
Service Station Equip. Co. 22–23–101
Service Recorder Co.
Sharpsville Boiler Works Co.
Shell Petroleum Corp. 117
Shepard Corp., Arthur B.
Shreveport-El Dorado Pipe Line Co., Inc.
Simms Oil Co.
Sinclair Refining Co. 108
Sistersville Tank & Boiler Works
Skelly Oil Co. 123
Smith Engineering Co. 68
Sonneborn Sons, Inc., L.
Southwestern Engineering Corp.
Spang, Chalfant & Co., Inc.
Standard Boiler & Plate Iron Co.
Standard Steel Works
Steel Drum Accessories Corp. 133
Steinke Bros. Mfg. Co. 93
Sterling Motor Truck Co. 15
Sterling Oil Co. 2–3
Sun Oil Company
Sun Shipbuilding & Dry Dock Co.
Superior Oil Works 107
Swan-Finch Refg. Co.

Tagliabue Mfg. Co., C. J.
Taylor Instrument Companies
Texas-Mexican Oil & Refg. Co.
Texas Pacific Coal & Oil Co.
Tokheim Oil Tank & Pump Co.
Trailmobile Co.
Transcontinental Oil Co.
Tube Turns, Inc.
Tulsa Boiler & Machinery Co.

Union Carbide & Carbon Corp.
Union Metal Mfg. Co.
Union Oil Co. of Pennsylvania
U. S. Air Compressor Co. Second Cover
U. S. Cast Iron Pipe & Foundry Co.
U. S. Industrial Alcohol Co.
Universal Oil Products Co. 71

Vacuum Oil Co.
Viking Pump Co.
Vilter Mfg. Co.
Viscosity Oil Co.
Vogt Machine Co., Henry

Wadhams Oil Co.
Walworth Co.
Waverly Oil Works Co.
Wayne Co.
Westcott & Greis, Inc.
Wheaton Brass Works, A. W. 42
Willock Oil Corp.
Wilson & Bennett Mfg. Co. 110

York Safe & Lock Co. 111
Youngstown Boiler & Tank Co.